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CHARLES BUTLER, Vicar of Wootton, 1600-1647

*Father of English Bee-keeping
and
Celebrated Philologist*



**The Church of Wootton St. Lawrence
as it was in Butler's time**

CHARLES BUTLER

A Likeable Hampshire Worthy

Charles Butler earned a place in the annals of three contemporary historians : John Aubrey, Thomas Fuller, Anthony à Wood : and his five books were well received in University and Court circles in the reigns of James I and Charles I. These books dealt with logic, bee-keeping, theology, grammar, and music. His versatility was matched by the vitality of some of his forward-looking ideas, which still claim attention. In 1913 a book appeared in Germany on Butler's philology. In 1925 the *Musical Times* drew attention to his unique bee-music. In 1952 a natural history journal in America is publishing instalments of a work on Butler and his descendant, Gilbert White, of Selborne. It is not given to many men to reach eminence in so many ways as did Charles Butler, author, schoolmaster, and devoted country parson. Thomas Fuller included him in "The Worthies of England" in 1662 : and fifty-four years of his long life were spent in and around Basingstoke.

A Musician, Schoolmaster, and Country Parson. Ambrose Webbe, Vicar of St. Michael's, Basingstoke (1597-1648), was probably responsible for bringing Butler to North Hampshire, because both were contemporaries at Magdalen College, Oxford, both came to this neighbourhood in the same year, and both proved to be convinced Anglicans. Butler bade farewell to Thomas Pygot, Knight, in a note dated at Oxford in May, 1593. From 1579 onwards he had been a chorister at Magdalen, and an industrious student proceeding M.A. in 1587. He probably remained as a teacher, for he had written there a school-book, "The Logic of Ramus," although it was not published until 1597 in his Basingstoke days. It is not unlikely that Thomas Pygot was related to Richard Pygot, a musician-monk, pensioned at the dissolution of the monasteries and already a member of the Chapel Royal. If so, this may be a link in Butler's musical interests.

There is no record of Butler's ordination either at Oxford or at Winchester; but the first see was vacant, and no ordinations are recorded in the Bishop's registers at Winchester from 1593 for many years. He was appointed in 1593 Rector of Nately Scures, with its tiny 12th-century Church, four miles to the east of Basingstoke : and two years later he became Master of the Holy Ghost School on the north side of that town, with a stipend of £12 a year. He was the most outstanding of all the Elizabethan Schoolmasters at Basingstoke, for his school-book, "**The Logic of Ramus**" became a "best seller," used in schools and the University of Oxford "with love and liking." Butler was the English Ramus, for he spread here the views on logic taught by Pierre de la Ramé (1502-70) in France, whose breach with the accepted views of Aristotle aroused such hostility that his foes threw him from his window to the daggers of the mob below in the Massacre of St. Bartholomew's night. It is fitting that Butler's name is lifted high above old Basingstoke, inscribed on the 13th-century Tower wall of the Holy Ghost ruins, for that wall is all that remains of his School. Its modern counterpart, Queen Mary's Grammar School, is nearby; the Head Master like Butler is styled "Chaplain of the Holy Ghost School"; the badge includes "The Dove," and the motto is "Spiritum Nolite Extinguere," both dear to Butler. In 1600 he resigned his Rectory and Schoolmastership to become Vicar of Wootton St. Lawrence, which Anthony à Wood described as a "poor Vicarage, God wot, for so worthy a scholar." Butler retained a connection with Ambrose Webbe and St. Michael's, for in 1622 the Basingstoke Churchwardens' accounts record : "received of Charles Butler for his wife's seat to sit in the 8th seat in the south side range, where widow Edwards sat, 16d." Butler proved to be a painstaking Vicar of Wootton in every way until his death forty-seven years later at the age of 88 or thereabouts, when he was buried in a nameless grave in the chancel.

The Four Books, written at Wootton, on Bees, Theology, Grammar, Music (1609-36).

1609. "The Feminine Monarchy, or History of Bees." Dr. H. M. Fraser, an authority on Butler, writes in the *Bee World* in 1950, "no-one has ever tried to replace this classic bee-book; the author was a ripe scholar, who possessed one of the most powerful intellects, which have ever engaged in bee-keeping." Mr. Gerald Hayes in the *Musical Times* in 1925 says : "this is not only a manual for the bee-keeper, but is lifted far above that level with an insight and a beauty, which render it worthy of a place beside the famous work of a modern poet." Chapter V contains the four pages of bee-music at swarming time, sounds of the bees set to their equivalent musical notes: and the amazingly patient observer, Butler, writes : "I am sure, if I miss, I miss but little" of these sounds. Chapters IV and VI give Butler's discoveries of the male sex of the drones, and the wax scales which form into the comb. His cautious observations enabled him confidently to part company with the host of ancient bee-writers on various points : but this same caution hindered him from advancing suggestions, which might well have brought him to one of Nature's astounding facts. This fact was that "the queen-bee after a single traffic with a drone continues to produce fertile eggs for the rest of her three or four years of life!" The book "travelled into the most remote parts of this great Kingdom of Great Britain, and was entertained of all sorts, both learned and unlearned." In 1623 a second edition had a foreword in verse by Dr. John Hammond, Royal Physician to James I. In 1634 the third edition was boldly written in Butler's new phonetic spelling ("Feminin Monarki"), with a foreword in verse by George Wither, of Bentworth, whose praise soars in the final lines, "Butler, he'll say (who these thy writings sees) Bees counsel thee or else thou counselst Bees." This edition was dedicated to Queen Henrietta Maria : and so arose a custom whereby all great bee-books were dedicated to Queens and never to Kings (Warder's to Queen Anne; T. Wildman's to Queen Charlotte; Bevan's to Queen Victoria).

1625. "The Marriage of Cousins" was a work of considerable theological learning, proving that such affinity was no bar to marriage; and Dr. Prideaux, Vice-Chancellor of Oxford University, said that it was the best ever written on the subject. It aroused widespread notice. It arose out of the marriage in Wootton Church of Butler's son, William, to a cousin, Mary Butler, in 1624.

1633. "The English Grammar," signed "Wootton, Sept. 11, An. D. 1633" was "graciously received of His Grace's sacred hands" i.e. by Charles I. The chaotic spelling of his times led Butler to invent a system of spelling words in line with their accepted sounds, and also place a number of additional letters representing these sounds in the alphabet. This phonetic spelling was so drastic, that it hindered the spread of his books, agitated the great Dr. Johnson 122 years later in the Preface to the Dictionary (1755), and has aroused interest in our own times. Butler, as a spelling reformer on less drastic lines, might well have produced lasting effects on the English language.

1636. "The Principles of Music." This was the only book on the theory of music written in the reign of Charles I, to whom it was dedicated. Butler used his phonetic spelling, regardless of convention. Two early compilers of our musical history take note of his book: Hawkins describes it as "learned and valuable," and Burney says, "this book contains more knowledge in a small compass than any other of the kind in our language." In Book II he deals with musical instruments, the behaviour of the choir, the Puritans' objections to music used in Church and for such purposes as dancing. He insists that Church music can be used as an outpouring of the Spirit, and that in every Church one should aim at perfection. As to dancing and similar uses of music he concludes, "there is no sufficient cause that we should wilfully deprive ourselves of these permitted comforts." His last written words occur here, and indicate the background of piety, honest thought, and conscientious living, which ennobled Charles Butler, the country parson. "Live Soberly, Righteously and Holily; Holily in respect to God; Righteously in respect of our Neighbour, Soberly in respect of Ourselves."

The Faithful Vicar of Wootton for nearly Half-a-Century (1600-1647). For 43 years Butler wrote his entries of baptisms, weddings, and burials in our Register in Latin and in neat round handwriting. For 40 years our splendid Churchwardens' Accounts give us glimpses of his concern for the fabric and furnishings of Wootton Church, and the worship offered there. The Civil War put a stop to both records in the early forties of the 17th century.

BUTLER'S FAMILY

The Register tells us of Butler's three sons, William, Edmund, Richard, baptised at Wootton: Edmund's only son, Charles, and three grandsons were also baptised here, and so were Richard's three sons and only daughter. Butler's daughter, Brigid, was buried at Wootton aged nine months in 1605: and his other daughter, Elizabeth, baptised in 1612, and married on St. Valentine's Day in 1633 to the Reverend Richard White, curate of Eastrop, was his "honey girl." Butler gave her this name, so says John Aubrey, because he had put aside some hives of bees at her birth, and these yielded a marriage portion of £400! Elizabeth's great grandson was Gilbert White, the famous naturalist and country parson at Selborne. Her husband became Rector of Worting in 1639, and Vicar of Basingstoke 1661-85. Finally there is the record of Mrs. Butler's death at Wootton in 1628; and Butler was a widower for nearly 20 years. There was poverty at Wootton Vicarage: and 90% of the benefices in England were valued at less than £26 a year. The slender income originally fixed for a celibate no longer matched the needs of a married clergy. Butler's habit of experimenting in the fields of Nature probably proved expensive, for when he was observing the habits of the silkworms, he says sadly: "I doubt me if she will never quit cost." Probably Mrs. Butler made up for this loss by her work in her stillroom, where honey was turned to many uses, as ointment, plasters and good old mead. Bee-keeping probably was profitable, for "whoso keepe wel sheepe or bee'n, sleepe or wake, their thrift cooms in." The two fields named Honeyfield and Waxhanger within a few hundred yards of the Vicarage may hold memories of Butler's time.

THE WITHERS OF MANYDOWN

The Register also reminds us of the great house of Manydown, one mile to the south-west of the Church, the home of the Withers from 1389. Squire John Wither was buried by Butler in 1620; and his grave-cover in the chancel bears lovely lettering and armorials. His gift, a fine silver communion cup and cover-paten dated 1625, was first used by Butler. Our oldest mural tablet near the south door is in memory of his daughter-in-law, Susanna Wither, who was buried with three of her children in the "Church Ile" in 1632. His son, Richard, gave a new Bible, the noble Authorised Version, in 1628 in memory of a brother, James Wither, Fellow of New College, Oxford, who died there in the previous year. His nephew, George Wither, of Bentworth, wrote the first Anglican hymn-book, "Hymnes and Songes of the Church," in 1623 with a glorious treasury of tunes by Orlando Gibon; and it is likely that the music-loving Butler would have these sung by a choir in the west gallery with its "pare of new stares" set up in Wootton Church in 1576. Squire William Wither succeeded his father, John, at Manydown, and became a prominent Parliamentarian, dying in 1653, six years after Butler's death. The Register records no less than 14 Baptisms, 3 Weddings, and 9 Burials connected with the Wither Family in Butler's time.

WOOTTON CHURCH

The Churchwarden's Accounts dating back to 1558 were bound in a 14th-century parchment cover; and the careful Butler added the present leather binding in 1630. They show how thorough he was in keeping the Church up to a sound repair level for forty years beginning with "the new makyng of the east ende of the north ile," and involving the glazier, painter, shingler, tiler, mason, brick-burner, carter, carpenter, sawyer, blacksmith, plumber, leather-worker. Goodwife Mortimer was paid "for making clean ye Church"; but the village bellringers were voluntary, and were paid only on special occasions, such as in 1610 when James I passed by. Four bells were cast in 1625 to replace three mediæval bells (ye grete, medell, litell bells) and one cast in 1604. Their inscriptions read: "Our Hope is in the Lord"; "Let our Hope be in the Lord"; "Prayse ye the Lord"; "The Bell was made 1625." Butler's orderliness is shown by a note on the cover of the Accounts with the heading "1600 Ordo quo coemiterii repagula sunt struenda," giving a list of those responsible for each section of the Churchyard fences, the Vicar being charged with the repair of the gate.

The Church interior was a scene of order and simple beauty; whitened walls; colourful Royal Arms with the Commandments and sentences of Scripture above the round Norman chancel arch; a pulpit with a silk cushion and seats for the Vicar and the Clerk; a Communion table overspread with a rich carpet falling on all sides in lovely folds, and fenced off in dignified isolation in the chancel; a "cofer" nearby with Butler's clean surplice and new service books; and in the nave were seats for they were mended in 1613. Much of all this was provided in Butler's time. "Morninge Praier" was offered every Sunday; and the Communion was celebrated fully at each quarter, Nueyeerstide, Easter, Trinitie, Alhollantide. Butler's solicitude is shown by the provision of Communion for his scattered parishioners, let and hindered by miry roads from Ramsdel, Up Wootton, Est Okle, on Palm Sunday, Maundy Thursday, Easter Eve and Easter Day. He discontinued the mediæval custom of providing Halloaf, which was blessed at the Mass and distributed in the parish to the poor by the Clerk. In its stead the money was collected yearly at Easter from 1601 for "Bred and Wyne" for the Communion, each parishioner being charged 4d., 3d., 2d., or 1d. In 1624 Butler decided that it was fairer for the householder to pay for all his servants; and that these should be exempt. Butler gave relief to the strangers plodding through the parish from the Churchwardens' funds. We catch glimpses of these unfortunates, the Irish, the two "lincolnshier travellors," the "poor man that had his hous burnt," in their Accounts. The Accounts tell us of the village fair, called Kingales, with its feasting, dancing, play-acting, games such as pewter and tronks resembling our hoop-la and bagatelle. The proceeds helped to pay for the Church repairs. Charles Butler's eyes held the merry twinkle of the likeable cavalier, as well as the wise depths of the saintly Vicar. Thomas Fuller assures us that Butler was "a pious man, a painful (i.e. painstaking) preacher, and a solid divine."

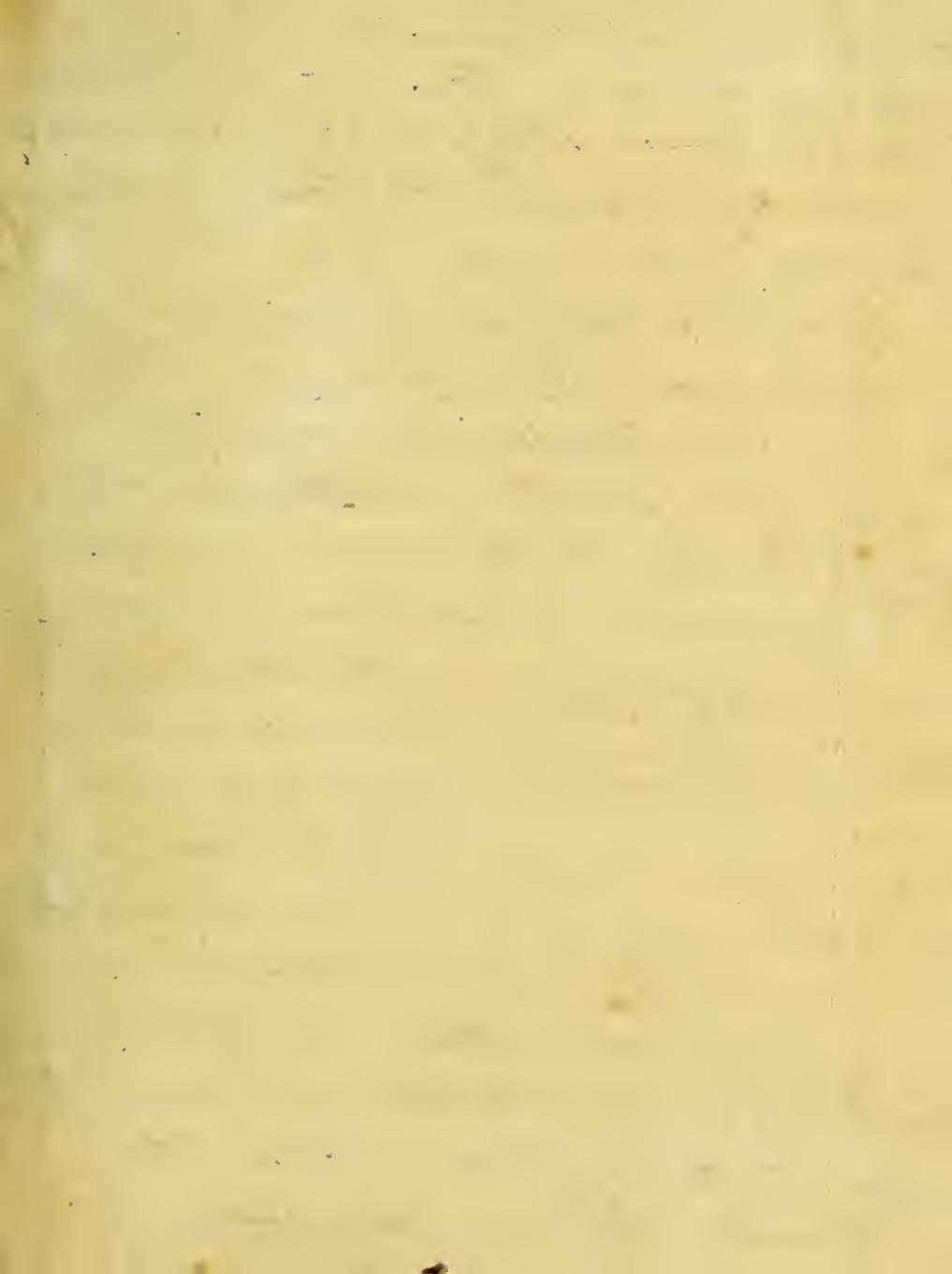
Closing Shadows of the Civil War. His piety and learning saved him from ejection in 1643, when the Puritan Long Parliament abolished the office of bishop, and Walter Curle, Bishop of Winchester, was besieged in his house, escaping in a dung cart, and in 1645 when Archbishop Laud was executed, and the use of the Prayer Book was forbidden under pain of fine and imprisonment. Manydown was quartered with Parliamentarian troops under Captain Guillaume in 1643, and Sir William Waller himself came to Wootton in that year. Squire William Wither was a member of the Commission for Public Safety authorised to seize warlike stores for Parliament. Butler was aged; and probably his son-in-law, Richard White, Rector of Worting nearby, helped with the duties at Wootton. Our faithful old Vicar "took his farewell of this world on March 29th, 1647, aged 88 years or thereabouts, and was buried in the chancel of the Church of Laurence Wootton" in a nameless grave amid the heartrending scene of Civil War. His incredible patience as an observer in the fields of Nature, his diligent thoroughness as a scholar, and his painstaking concern for the House of God, make him a bright and shining light in those dark days. His name on the weather-beaten old wall among the Holy Ghost ruins at Basingstoke, and his nameless grave in the old village Church at Wootton remind us of his own words: "Ah! injurious Time!"

The Coronation of Queen Elizabeth II turns our thoughts to Charles Butler, a likeable Hampshire Worthy, whose long and useful life began in 1560 at the threshold of the first Elizabethan Age. A Coronation Commemoration in the form of a stained glass window of artistic merit, representing Charles Butler, is to be placed in the north aisle of Wootton St. Lawrence Church. Your gift in memory of Wootton's Great Vicar will be welcomed, and may be sent to:—

COLONEL A. S. BATES, D.S.O.
Honorary Treasurer, Charles Butler Memorial Fund
Manydown Park
Basingstoke

Note.—The Vicar, Rev. F. R. Money, acknowledges with gratitude the kindness of Dr. H. M. Fraser, of Northwood, Middlesex (the authority on the life and works of Charles Butler), who placed many notes at his disposal with permission to use them.

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Charles Butler was born at one of the
Wycombe's (Great Wycombe I suppose)
Brooks, entered a Student into Magdalen
Colle in the year 1579. took a degree of M.A. &c
He wrote & published the Feminine Monarchy,
or a Treatise on Bees ox 1609 oct.

Lond 1623. ox. 1634 qu, translated into
Latin by Richard Richardson sometimes
of Emmanuel Coll. Camb: now or lately an
Inhabitant of Brixworth in Northamptonshire.
Lond 1673 oct. In this version he left out
some of the ornamental & emblematical
part of the English copy & hath with the
Authors scattered & intermixed his own
observations on Bees & what of note
he had either heard from men
skilful this way or had read in other
books. But this last translation being
short in the sale there hath been
a new title put to it and said there
to be printed at oxon 1682 oct.
(Wood's Athene Oxonienses p 51
A. 1791.)

The Rev Charles Butler was born
at High Wycombe in Buckinghamshire 1559.
was educated at Oxford. Bible Clerk
at Magdalen College. Master of the
Grammar School at Basingstoke.
Circa 1600, Vicar of Lawrence Weston
in Hampshire & there died A. 1647.

He published the Feminine Monarchy
or a Treatise on Bees 1609. 8^{vo} - 1623. 8^{vo}
and 1634, 4^{to}.

This very curious book is quoted by
Dr Johnson in his Dictionary ~~Platonic~~
~~lib. tunc 1618~~

He published also. Platonic lib. duo 160.
De propinquitate matrimonium impudente
regula generalis 4^{to}.

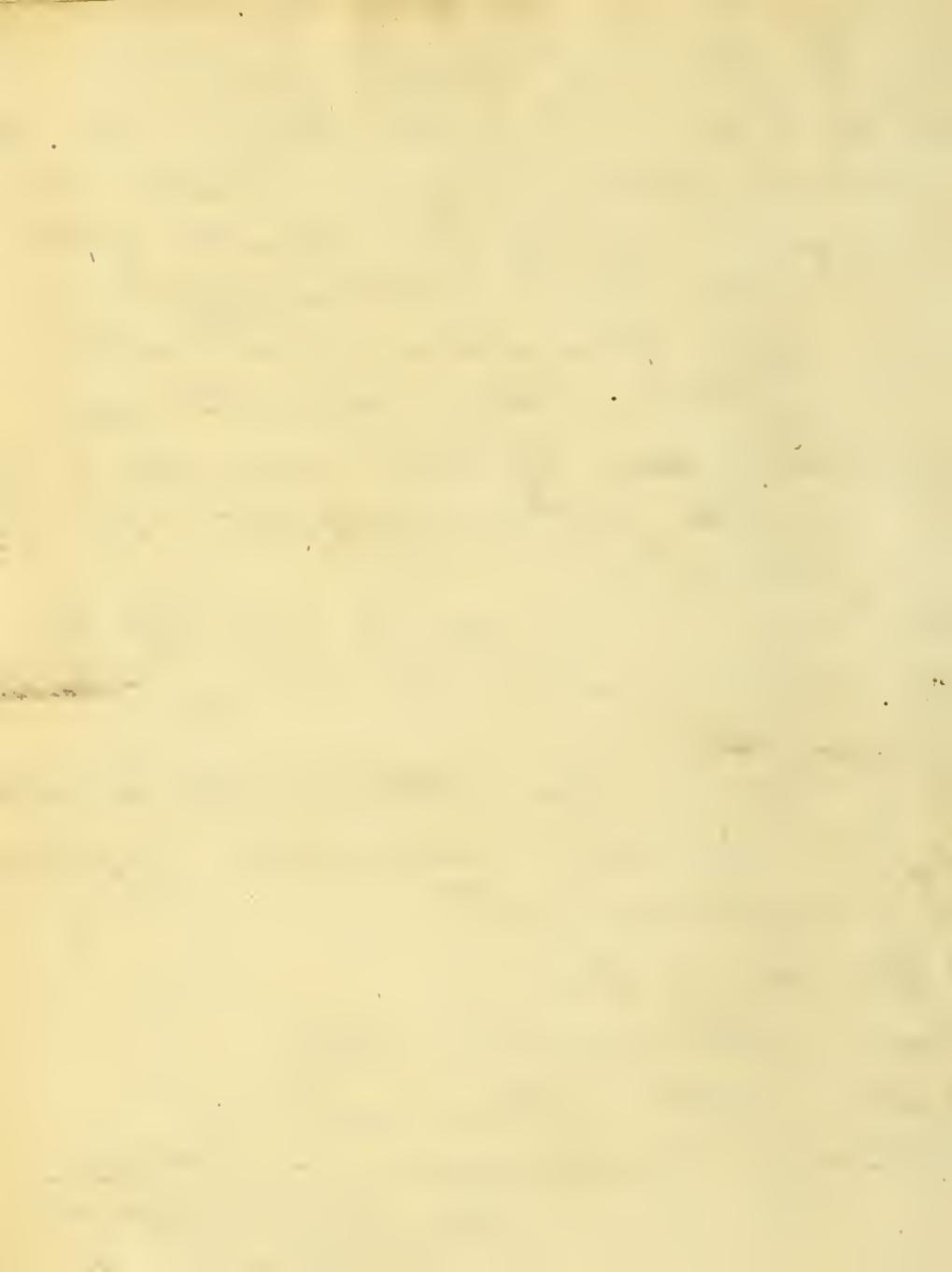
Oratoria lib. duo 4^{to}.

English Grammar 4^{to}

The Principles of Music 4^{to}

This last is highly praised by Dr. Burney.

(See Biog Dict
& Watt's Biog:)



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54. 55. 56. 57. 62. 77. 97. 101. 102. 103.
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the highest

standard



Quatuor apum
ordinis.

Princeps.

Duces.

Plebs.

Incerte fuci.



Miraris Arte conditas mirâ domos,
Opesq; regales in his reconditas?
SOLENTIA ET LABORE fuint omnia.

C. B.

THE
Feminine Monarchie:

OR

THE HISTORIE
OF BEES.

Amicorum Hagiæ.

*Alterius non sit, qui
suum esse potest.*

Speciebus.

S H E W I N G

Their admirable Nature, and Properties,
Their Generation, and Colonies,
Their Gouvernment, Loyaltie, Art, Industrie,
Enemies, Warres, Magnanimitie, &c.

TOGETHER

With the right ordering of them from time to
time: And the sweet profit arising thereof.

Written out of Experience

By

CHARLES BUTLER. Magd:



Plaut: in Trucul: Act: 2. Sc. 6.

Pluris est oculatus testis unus, quam auriti decem.

L O N D O N,

Printed by JOHN HAVILAND for Roger Jackson,
and are to be sold at his Shop in Fleetstreet, ouer
against the Conduit. 1623.





THE PREFACE TO THE READER.

HE great Naturalist, to expresse the excellency of the nature of Bees, saith thus, *Inter omnia insecta principatus Apibus, & jure praecipua admiratio; solis ex eogenere hominum causa genitis.* Of all *insecta* the Bees are chiefe, and worthily to be most admired; being the only things of that kinde, which are bred for the behoote of men. The later part of which saying, although the delicate Silk-worme haue in some hoter Climates disproued; (for in the colder countries, such as is our Iland of Britaine, I doubt mee shée will neuer quit cost: and therefore is here to be entertained only of them, that doe more respect their pleasure, than their profit; and doe content themselves with the beholding of their queint worke, not expecting any further recompence for their expence and paines;) yet must shée needs confesse the former, and wheresoeuer shée meet the ingenious and laborious Bee, yeeld the precedence to her, as to hir Better. For the fruit of the Silk-worme serueth only to couer the body; but the fruit of the Bees to nourish and cure it: that is to be applied outwardly, this to be inwardly receiued: that for comlinesse and conueniency, this for health and necessity. But, to omit comparison, the worke and fruit of the little Bee is so great and wonderfull, so comely for order and

*Plin. Natur.
his. l. 11, ca.
50.*

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beauty, so excellent for Art and wisdome, & so full of pleasure and profit ; that the contemplation thereof may well be semme an ingenious nature. And therefore (not without cause) are the Bees called the Muses Birds : *Apes cum causa Musarum esse dicuntur volucres.*

Var. l. 3. c.
15.

Nat. Hist.
l. 11. c. 9.

The loue of which did so rauish *Aristomachus* and *Philiscus*, that, as *Plinie* reporteth, they were pleased to spend most of their time in this pleasing businesse. *Ne quis* (saith he) *miretur amore earum captos Aristomachum Solensem duodecim et octo annis nihil aliud egisse; Philiscum vero Thasium in desertis apes colentem Agrium cognominatum: qui ambo scrip- fesse de his.* Aristotle thought his *Historia animalium* unperfect, vnlesse he had inserted a Tract of the Nature of Bees : of which he discourses more at large, than he doth of any other liuing creature. *Plinie* likewise, in his *Naturalis historia*, is very copious in this argument. Besidēs whom, diuers other haue wrtien thereof : as *Columella*, *Varro*, *Palladius*, *Averroes*. Yea the learned & graue Fathers of the Church, *S. Ambrose*, and *Igidore* haue thought it asubiect fit for their pennis. Vnto which I may adde infinite others of latertimes, both in Latine and English.

But the many yeeres experiments & obseruations, which those great Bee-masters *Aristom.* and *Philiscus* had least in wrting to posterity ; Time, an injurious Time, hath buried in obliuion. And for the rest that are extant, they seeme vnto me to rely more vpon the relation of others, than any certaine knowledge of their owne. Notwithstanding there are scattered in them, specially in *Aristotle* & *Plinie*, among many false and friuolous conceits, some true and profitable notes : which being found agreeable to experiance, I haue here and there in this Treatise, as the matter requireth, for ornament and authoritie inserted. But the later Writers, imitating the ancient where they thought good, chusing some of their directions, and refusing others,

The Preface to the Reader.

thers, doe, for the most part, vnluckily light vpon the worse: so that, being compared, they are no way matchable vnto them; whom by the aduantage of time they might haue surpassed. Among which *Georgius Pictorius* a learned Physician deserueth best, as hauing taken most paines in perusing the ancient Authors, and gathering their matter into his method. Whom one *T. H. of London* translating word for word into English, as well as he could, concealing the Authors name, aduentured to publish in his owne name. These and the like when a Scholar hath throughly read, hee thinketh himselfe throughly instructed in these mysteries: but when he commeth abroad to put his reading in practise, euery silly woman is ready to deride his learned ignorance.

Wherefore considering how great the vertue and efficacie of the fruit of Bees is, both for the preseruинг, and restoring of mans health, I thought it not amisse to spend some by-time for my recreation, in searching out their nature and properties, their helpes and hinderances, that I might know how to doe good vnto them, which are so good for vs, and what is the due and right ordering of these delightfull, profitable, and necessary creatures. And hauing to my contentment, though to my cost, in some sort obtained my desire, I was incited, euen by the rule of charitiie, to communicate that to my neighbours and country-men, which I haue since found so beneficiale to my selfe: so that the Reader may now freely reapre the fruit of that, which the Author hath deereley sowne vnto him.

The Philosopher intreating of the breeding of Bees, professeth himselfe vncertaine of their sex: and therefore, willing in this vncertaintie to grace so worthy a creature with the worthier title, he euery where calleth their gouernour *Banxes, Rex.* As many as followed him, searching no farther than he did, were content to say as he said. So that I am inforced

*Thomas Hill
(penes me.)*

V.c.10.p.3.

*De generat.
an.1.3.c. 10.*

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forced (vnlesse I will chuse rather to offend in *rebus*, than in *vocabus*) by their leave and thine (learned Reader) to straine the ordinarie signification of the word *Rex*, and, in such places, to translate it *Queene*, sith the males heere beare no sway at all, this being an *Amazonian* or *feminine* kingdome. v.

V. c. 4. n. 11. In distinguishing the times of the yeere, I vse the Astro-nomicall months, as most naturall and fittig to my purpose. v. Where note that by the name of each moneth, is commonly vnderstood the first day of the same moneth, (namely, wheresoever this preposition *At*, is set before it) except onely where it followeth, *In*, or *After*, or otherwise the sense doth plainly shew that it is spoken of the whole Moneth.

V. c. 3. n. 36. When you haue once, for your satisfaction, perused this Booke, you need not afterward seeke farre for any thing therein, whereof you doubt: the *Index* of the Chapters or Contents of the Booke; and of the Marginall notes, or Contents of the Chapters will readily direct you. For example, if you would know the Spleeting of Hives, or the manner of Hiving Bees; looking into the *Index* of the Chapters, you shall perceiue the one to appertaine to the Third, and the other to the Fifth; and running ouer the Contents of either Chapter, you shall finde the first to be the Tenth note, and the other the 53. Then turning to these Marginall Notes in the said Chapters, you haue in the Text ouer against them your desire.

Note also, that whereas you haue in the Margin, with these Marginall Notes, certaine References vnto other places of the Booke, for further explanation of those places against which they stand; *V.* signifieth *vide*, or *See*, *C.* with his number the Chapter, and *N.* with his number the Marginall Note. But if *N.* follow *V.* without *C.* then doth it note some Note of the same Chapter.

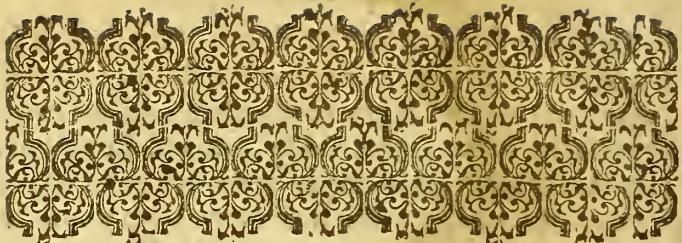
The Preface to the Reader.

I am out of doubt that this Booke of Bees will in his Infancie lie hidden in obscuritie, as the Booke of *Tropes* and *Figures* did for a while goe vnregarded, without friends or acquaintance: but as that did by little and little insinuate it selfe into the loue and liking of many Schooles, yea of the Vniuersitie it selfe, where it hath beene both priuately and publikeye read; (a fauour, which this Mother doth sel-dome afford to hir owne Children, lest haply she should seeme too fond ouer them:) so this will in time trauell into the most remote parts of this great kingdome of Great Britaine, and be entertained of all sorts both learned and unlearned: although the *Muses* Birds are fittest for the *Muses*, and the knowledge of their long-hidden secrets was chiefly published for the *Muses* friends. *Quibus me, quicquid sum,*
& studia mea dico. Wotton. May 30. 1623.

CHAR: BUTLER.

A

Ad



Ad Authorem.

 *Vae natura Apibus, qua membra, scientia, sensus,
Virtutes, etas, ingenium, pietas,
Qua statio, & sedes, soboles, examina, tacta,
His bac condendi promptus ubiq; modus ;
Qua princeps, populus, regimen, respublica, mores,
Qua sint arma, hostes, pralia, castra, duces,
Quam celeri campos gressu, sylvasq; peragrant,
Qua cellas singunt arte, labore replent,
Quam pro sint hominum generi cœlestia dona,
Ut que magis pro sint quo moderanda modo ;
Per te miranda hac levium spectacula rerum
Mystica tot seclis clausa reclusa patent.*

*Aut a consiliis Apibus, Butlere, fuisisti,
Aut a consiliis est Apis ipsa tuis.*

When I had view'd this Common-wealth of Bees,
Obseru'd their *Lines*, their *Art*, and their *Degrees*:
As ; how, beside their painfull *Vulgar ones*,
They haue their *Prince*, their *Captaines*, and their *Drones* :
How they *Agree* ; how temp'rately they *Feed* ;
How curiously they *Build* ; how chafstly *Breed* ;
How seriously their *Bus'nesse* they intend ;
How stoutly they their *Common-good* defend ;

How

How timely their *Provisions* are prouided ;
How orderly their *Labors* are diuided ;
What *Vertues* patterns, and what grounds of *Art*,
What *Pleasures*, and what *Profits* they impart :
When these, with all those other things I minde
Which in this *Booke*, concerning *Bees*, I finde :
Me thinkes, there is not halfe that worth in *Mee*,
Which I haue apprehended in a *Bee*.

And that the *Pymere*, and these *Hony-flies*,
Instruct vs better to *Philosophize*,
Than all those tedious *Volumes*, which, as yet,
Are least vnto vs by meere *Humane-wit*.
For, whereas those but only *Rules* doe giue,
These by *Examples* teach vs how to liue.

Great God Almighty ! in thy pretty *Bee*,
Mine Eie (as written in small letters) sees
An *Abstract* of that *Wisdom*, *Power*, and *Loue*,
Which is imprinted on the *Hean's* aboue
In larger *Volumes*, for their eies to see,
That in such little prints behold not Thee.
And in this *Workmanship* (oh-Lord) of thine,
I praise thy *Wisdom*, and thy *Power* diuine.

And *Praise* deserues this *Author* ; who hath chose
So well his *Times* of *Leisure* to dispose ;
And in that *Recreation* to delight,
Whick honour God, and vs aduantage might.
For, since our *humane* weakenesse doth require,
That in our seriuost *Labours* we retire ;
(Because vnlesse the *String* be sometime slacke
The strongest *Bow* will haue the *feeblest* *backe*)
What *Recreation* better can besir
Our graue *Divines* ; than (when the *Holy* *writ*
Is laid aside) in *Gods* great *booke* of *Creatures*
To reade his *Wisdom*, and their *usefull* *Natures* ?

Thus doth our *Author*. And, not only thus ;
But, like his *Bees*, makes *hony* too for vs.
And is contented that, to helpe vs thriue,
We should partake the profit of his *Hinc*.

For which (my share) I thanke him : and for those,
The *Muses-Birds* ; whose nature here he shewes,
And imauer such as will his *Paines* contemne,
The *Muses* thus, by me, doe honour them.

GEORGE WITHER.



Ad Carolum Butler.

A Ntè mel è chartis promptissi, ut Rhetor, apinum,
At nunc mellitas promis, ut Histor, apes.
Incipit ex apibus, sed & in mel definis ipsum :
Suaviter incepit, suavius exit opus.

WARNERVVS SOVTH.



The Chapters, or the Contents of this B O O K E.

MY Booke of Bees I divide into ten Chapters.

- 1 The first, of the nature and properties of Bees, and of their Queen.
- 2 The second, of the Bee-garden, and Seats for the Hues.
- 3 The third, of the Hues, and the Dressing of them.
- 4 The fourth, of the Breeding of Bees, and of the Drone.
- 5 The fift, of their Swarming, and the Huing of them.
- 6 The sixt, of their Worke.
- 7 The seventh, of their Enemies.
- 8 The eighth, of Feeding them.
- 9 The ninth, of Remouing them.
- 10 The tenth, of the Fruit and Profit of them.

The Notes or the Contents of
the first Chapter, concerning the
nature and properties of Bees.

- 1 Bees yeld great profit with small cost.
- 2 Every country fit for Bees.
- 3 Bees abhorre idlenesse.
- 4 Bees haue a Common-wealthe.
- 5 Their working, watching, fighting, dwelling, diet, wealth, and young ones are all in common.
- 6 Bees alwaies loyall to their Soueraigne.
- 7 Bees endure no government, but a Monarchie.
- 8 A memorabe experiment.
- 9 The description of the Queen-Bee.
- 10 Bees haue alſo inferior Gouvernours or Capitaines.
- 11 Which are knowne by peculiare markes.
- 12 Two sorts of Bees.
- 13 The parts of a Bee.
- 14 Hir hornes.
- 15 Hir eyes.
- 16 Hir fangs.

- 17 Hir tongue, with the parts of it.
- 18 Hir foure wings.
- 19 Hir feet.
- 20 Hir two weapons.
- 21 Hir fangs commonly ued against insecta.
- 22 Hir ſpere sometime.
- 23 Stinging preuent death to Bees.
- 24 The ſpares commonly ued againſt other creatures.
- 25 Haire and feathers cause the Bees to ſting.
- 26 Wooll and woollen do not offend them.
- 27 Fufian, Leather, and Velvet naught among Bees.
- 28 The Bees in their anger aime at the head.
- 29 When any is ſtung, the company muſt be gone.
- 30 The Bees haue the worſt, when they ſting.
- 31 They loſe their ſling and entrals, and conſequently their liues.
- 32 The ſpere, of it ſelſe, pierceth deepe when

when the Bee is gone.
 33 How to prevent the paine & swelling.
 34 Nothing but Time can cure their stinging.
 35 What things the Bee-master must avoid.
 36 The six properties of a Bee-master.
 37 Safer to walke then to stand among Bees.
 38 The fittest time to stirre about Bees.
 39 In the heat of the day they are most angry.
 40 How to be armed when the Bees are angry.
 41 Bees dangerous to Cattell.
 42 The Bees Senses.
 43 Their sight dimme.
 44 Their smelling very quicke.
 45 Hearing and feeling.
 46 Tasting.
 47 Their Vertues.
 48 Fortitude.
 49 Prudence and knowledge.
 50 A strange tale concerning the knowledge and devotion of Bees.
 51 Temperance.
 52 Injustice.
 53 Chastity.
 54 Cleanlineſſe.
 55 The age of Bees.
 56 The difference betwenee the young Bees and old.
 57 The office of the young Bees.
 58 And of the old.
 59 Bees wonte oftene to play.
 60 They are ſome kild with cold.
 61 How to reuive them.
 62 The Bees excellencies.
 63 Bees a chiefe exemplar of the diuine power and wiſdome.

The Contents of the second Chapter, concerning the Bee-garden, with Seats for the huies.

1 Of ſix things requisite in a Bee-garden, the firſt is, that it be nigh at hand,
 2 That it be ſafely fenced from cattell and winds.

3 The north & eaſt fences ſhould be high.
 4 The South and West fence muſt be alſo good, but not ſo high as to bide the Sunne from the Hues.
 5 In roughwinds the Bees need a ſkreenes.
 6 That it be ſweet.
 7 Neither very cold in winter, nor hot in Summer.
 8 A grasse ground is beſt, but kept notte and dry.
 9 Beſet with trees and buſters.
 10 Two ſorts of Seats.
 11 The beeches not ſo good as ſingle ſtooles.
 12 Swarmes may be ſet on Benches.
 13 Woodden ſtooles better than they of ſtone.
 14 The ſize of ſtooles.
 15 Which way the ſtooles ſhould be ſet.
 16 How neere to each other.
 17 How neere to the fences.
 18 Annus climactericus.
 19 The Bees Register.
 20 The ſtooles height.
 21 How to be ſooted.

The Contents of the third Chapter, concerning the Hues, and the Dressing of them, both before and after Huiing.

1 Two ſorts of Hues.
 2 Strawne Hues with their inconueniences and remedies.
 3 Wicker Hues with their inconueniences and remedies.
 4 Strawne Hues beſt.
 5 The fashion of Hues.
 6 The ſize of Hues.
 7 When Hues are to be made & provided.
 8 How Hues are to be dressed before they receive the swarmes.
 9 The pruning of Hues.
 10 The ſpraying or ſpleeting of them.
 11 The making of the Cop, and of the Spleets.
 12 The ſeasoning of them.
 13 The ſeasoning of an old Hine.
 14 How Hues are to be ordered when the Bees are in them.

15 The Hives alwaies well hackett.
 16 How to make a Hackle.
 17 The Cap of two sorts.
 18 The wreathed Cap.
 19 The platted Cap.
 20 The bignesse of the Hackle.
 21 The length of it.
 22 The Bell or garth.
 23 The buckle now & then to be taken off.
 24 The Hives alwaies close cloumed.
 25 Then seldome to be moued.
 26 How a Hiuе lifted vp is to bee set
downe againe.
 27 The Hiuе-doore.
 28 The Gate or Summer-doore.
 29 Of the doore posts and the use of them.
 30 The Winter-doore, or Wicket.
 31 The use of it.
 32 The Barre.
 33 The use of it.
 34 The Settle.
 35 How to order the Bee-hives through-
out the yeere.
 36 The Moneths and Quarters of the
Mellifex an yeere.
 37 SUMMER.
 38 In GEMINI set the Doores wide
open.
 39 CANCER.
 40 To make the Bees swarme.
 41 To keep them from swarming.
 42 LEO.
 43 How and when to kill the Drones.
 44 HARVEST.
 45 VIRGO.
 46 To keep the weaker Hives from rob-
bing.
 47 Set up the Winter-doores.
 48 And keepe them shut till they offer to
goe abroad.
 49 The reared stalls now to be set downe
againe.
 50 In Virgo try whether the Bees will
live.
 51 Now take the Combēs.
 52 LIBRA.
 53 Try them againe in Libra also.
 54 Now set up the Wickets to the best, &

keepe the rest shut till the Bees offer to
goe abroad.
 55 SCORPIO.
 56 Continue the shutting and opening of
the Wickets thus moneth alio.
 57 How to dress the Hives for Winter.
 58 WINTER.
 59 SAGIT. CAPRIC. AQVAR.
three sill moneths.
 60 How the Bees spend their time in
them.
 61 The first sharpe weather in Capr. Shut
the Bees in.
 62 And in pleasant weather let them loose,
if it may be, once a fortnight.
 63 The SPRING.
 64 PISCES.
 65 The first faire day in Pisces, set the
Bees at liberty.
 66 Now dress their Troughe.
 67 Cleanse the Stools.
 68 And feed or draine light stalls.
 69 ARIES.
 70 The second chiefe robbing-time.
 71 In T A V R V S, remoue the Barres.
 72 In GEMINI, the Winter-doores.

**The Contents of the fourth
Chapter, concerning the Breeding
of Bees, and concerning the
Drone.**

- 1 The Drone no labourer.
- 2 Diuers opinions of the Drones originall.
- 3 The Drone is the Male-Bee.
- 4 Diuers reasons prouing the Drone to be
the Male.
- 5 The first reason is, that they are suffered
in breeding-time only.
- 6 The second reason is, that the Drones
being taken away in breeding-time, the
Bees breed no more.
- 7 The third reason is, that they are bred
by the Bees.
- 8 The fourth reason is, that the Wasps
and Dorres haue Drones, which are
their males.
- 9 The breeding of Wasps by Drones.

9 The breeding of Drones by Drones.
 10 The fift reason is the apparent signes
 of their Sex.
 11 Aristotles objections answered.
 12 When the Bees begin to breed.
 13 The chiese time of breeding.
 14 The first breed are females.
 15 The manner of their breeding.
 16 The Bee-seed is first turned into a
 Worme.
 17 The Worme being dead groweth to the
 shape of a Bee, and then liueth againe.
 18 The breeding of the Lady-Bees.
 19 When the Drones are bred.
 20 When they come abroad.
 21 Two vses of the Drones.
 22 Where they lie.
 23 The male-Bees are subiect to the fe-
 males.
 24 When the Bees leaue breeding, and
 beat away their Drones.
 25 The Bees compared to the Amazons.
 26 They rid not their Drones all at once.
 27 When forward stalls begin.
 28 When the backward.
 29 When full stocks that haue not swar-
 med.
 30 When those that are ouer-swarmed.
 31 Sometime the Bees cast out even the
 white Cephens.
 32 Timely riddaing of Drones a good signe.
 33 Sometime they rid their Drones in
 the Spring.
 34 And afterward breed new againe.
 35 Sometime it is good to helpe the Bees
 in this worke.

7 The swarming-boures.
 8 The two swarming moneths.
 9 Rathe swarmes.
 10 Late swarmes.
 11 Black-beere swarmes are seldom to
 be kept.
 12 A prime swarm & an after swarm.
 13 A stall may cast foure times.
 14 Diuers causes of breaking the prime
 swarm.
 15 One prime swarme worth two after-
 swarmes.
 16 The vulgar Bees appoint the rising of
 the after-swarmes, and that vpon seuer-
 grounds.
 17 Fiu signes of the first swarming.
 18 The signes of present swarming.
 19 To lie forth continually is a signe they
 will not swarme.
 20 The causes of their lying forth.
 21 The remedie and meane to make
 them swarme.
 22 What is to be done to those that by no
 meane will swarme.
 23 How to replenishe an ouer-swarm.
 24 How to double a stall.
 25 How to draine all the Bees into the new
 hive, and so to take the old.
 26 The signes of after-swarmes.
 27 The rising of the after-swarmes is ap-
 pointed by the Rulers.
 28 The Bees Musike.
 29 The Princes part.
 30 The Queens part.
 31 The other Ladies parts.
 32 In the Bees song are the grounds of
 musike.
 33 Before swarming the voices come
 downe to the stoole.
 34 The manner of their swarming.
 35 The prime swarme being broken, the
 next may call and swarme within
 the eighthe day.
 36 All the swarmes of one hive come
 within a fortnight.
 37 What use there is of tinging the swarm.
 38 What is doe if the swarme bee way-
 ward.

The Contents of the fift Chapter, concerning the Swarming of Bees, and the Hiuing of them.

1 The parts of a swarm.
 2 When you may see the Queen-Bee.
 3 The swarme no younger then the focke.
 4 Many Drones in a swarm a good signe.
 5 A kinde spring for swarmes.
 6 Swarming weather.

39 Some swarmes provide them houses aforehand. 81 Set net a swarne neare an elkes living place.
 40 And then they slie away directly to the place. 82 What to doe when the swarne is new hied.
 41 Vacca alvearia sentem parata in Apirie. 83 How to remoue it in the evening.
 42 The hiving of Bees. 84 How to set it on his seat.
 43 When they are to be hied. 85 How to use it in the morning.
 44 The token of their flying away after they bee 86 Foule weather the first day doth much discon-
 seised. rage a swarne.
 45 How to fit the Hives to the swarmes. 87 Foule weather continuing doth make it droupe
 46 Better to under-hive a stall then to over-hive and die.
 47 Three things requisite to hiving. 88 A swarne may liue six daies without Ho-
 48 The Mantle. 89 How to prevent the drouping and death of a
 49 The single Rest. 90 How to cure a a drouping Swarne.
 50 The double rest.
 51 The brush.
 52 What the Hiver must doe.
 53 The manner of Hiving.
 54 Foure meanes of hiving a Swarne.
 55 How to hive a Swarne that lighteth vpon a 1 Bees most industrious creatures.
 bough. 2 In three moneths they cannot worke.
 56 Either high. 3 All the yeere after they lose no time.
 57 Or low. 4 Three fruits of Bees labour.
 58 How if it light vpon a high tree. 5 The first and ground of all is Wax.
 59 How if vpon the body of a tree. 6 How Wax is gathered and wrought.
 60 How if it light vpon the top of any thing. 7 How you may see the working of the combs.
 61 How if it light in the middle of a dead hedge. 8 How much wax they bring at once.
 62 How if it light on some hollow side of a bough or 9 The admirable Architecture of their combs and
 tree. cells.
 63 How if it slie into a hollow tree.
 64 How if it light vpon another Hive.
 65 The swarne is alwaies to be kept together, lest 10 The Drone-combe.
 the Bees kill one an other.
 66 The swarne to be set neare the lightinge place. 11 The Queenes cells are built single in diuers
 67 What to doe if a swarne part. places.
 68 Vniting of swarmes is profitable.
 69 The manner of uniting. 12 In fassion round.
 70 Another way.
 71 Two speciall inconueniences to bee. avoided in 13 The common error anent these cells.
 this worke. 14 The combes doe often change their hue.
 72 1. Superfluous multitudine. 15 Wax is gathered only in foure moneths.
 73 2. Ciuell warre. 16 Honey the second fruit is gathered in 9 moneths.
 74 To prevent the first. 17 Two sorts of Honey.
 75 To prevent the second. 18 How Ambrosia or grosse honie is gathered.
 76 When most danger is. 19 Ambrosia is the Schadons food, as water their
 77 A storie of a deadly feud.
 78 The causes of a swarmes going home againe.
 79 How to stay them.
 80 How to keepe them from other Hives.

The Contents of the sixt Chapter,
 concerning the Bees worke.

- 1 Bees most industrious creatures.
- 2 In three moneths they cannot worke.
- 3 All the yeere after they lose no time.
- 4 Three fruits of Bees labour.
- 5 The first and ground of all is Wax.
- 6 How Wax is gathered and wrought.
- 7 How you may see the working of the combs.
- 8 How much wax they bring at once.
- 9 The admirable Architecture of their combs and cells.
- 10 The Drone-combe.
- 11 The Queenes cells are built single in diuers places.
- 12 In fassion round.
- 13 The common error anent these cells.
- 14 The combes doe often change their hue.
- 15 Wax is gathered only in foure moneths.
- 16 Honey the second fruit is gathered in 9 moneths.
- 17 Two sorts of Honey.
- 18 How Ambrosia or grosse honie is gathered.
- 19 Ambrosia is the Schadons food, as water their drinke.
- 20 Being kept, it is soone corrupted.
- 21 And then becommeth most unsauory stopping.
- 22 Much stopping maketh the Bees forsake their hives.
- 23 This Ambrosia is commonly taken for wax.
- 24 Which error is disrowned by sense.
- 25 And reason.
- 26 And by authority.

27 How the pure Nectar is gathered.
 28 Two sorts of Nectar.
 29 Little-bony of two sorts.
 30 The first ordinary is a kind of Virgin-honey.
 31 All honey is either or finer, according to the soile.
 32 The full cells they close with wax.
 33 Nectar and Ambrosia made of many simples,
 whereof each maneth yeelde both variety.
 34 Dandelion continueth longest.
 35 What Pisces yeeldeth.
 36 What Aries.
 37 Taurus.
 38 Gemini.
 39 Cancer.
 40 Of Honie-dewes.
 41 The Bees warke most earnestly in a Honie-dew.
 42 What the Honie-dew is.
 43 When the Honie-dewes are most frequent.
 44 The time when they full.
 45 What Leo yeeldeth.
 46 Virgo.
 47 Libra.
 48 Scorpio.
 49 The Bees gather but of one kind of flower in one
 voyage.
 50 They gather honie out of poison.
 51 What store of Honie a stall may haue.
 52 Bees haue necessary use of water.
 53 Chiefly for their breed.
 54 The making of the matring-place.
 55 How to finde wylde Bees.
 56 Bee-troughs in Gardens profitable.
 57 The forme and size of a Bee-trough.
 58 The trough couer, and the use of it.
 59 The seafisning and undrizing of the Bee-trough.
 60 Bee-troughs of stone.
 61 Sometime they water in the streets.
 62 And after a shrowne, all about the garden.

7 4. The Swallow.
 8 Remedie against the Titmouse and Swallow.
 9 5. The Hornet.
 10 The Hornets sting is dangerous.
 11 6. The Wasp.
 12 When she feedeth upon Bees.
 13 When she stealeth honie.
 14 When they weare array.
 15 In what yeere the Wasps are few.
 16 In what yeere they abound.
 17 Remedies against the Wasps.
 18 7. The Moth.
 19 8. The Snaile.
 20 What harme the Moth doth.
 21 9. The Emet.
 22 10. The Spider.
 23 11. The Toad.
 24 12. The Frog.
 25 13. The Bee the Bees greateſt enemie.
 26 Robbing or fighting of Bees in winter and sum-
 mer but little.
 27 In the spring more earnest.
 28 The moſt ſpoile is made in Harueſt.
 29 What Stalls are moſt ſubiect to robbing.
 30 What Bees are the robbers.
 31 How they be gin the fray.
 32 Theeues of diuers Hives agree together in rob-
 bing.
 33 The deſcription of the Bees battell.
 34 In the battell is heard a ſound like a drum and a
 Fluit.
 35 The aſſault of the enemy.
 36 The deſence of the besieged.
 37 Neither ſide willing to yeeld.
 38 The exerſice of the defendants when the enemy
 retireth.
 39 The Wasps like Vultures.
 40 The battell ended they bury their dead.
 41 The ſecond aſſault of the enemy.
 42 When the true Bees yeeld, they goe with the Con-
 querours.
 43 Remedies.
 44 To prevent robbing.
 45 And to flay it, if you finde it in time.
 46 When it is too late, and what is then to be done.
 47 Robbing burſtfull alſo to the Theeues.
 48 In what yeeres robbing is moſt riſe.
 49 Bees kill poſſeſſors that waſter in the ſpring.

The Contents of the ſeuenth Chap- ter concerning the Bees enemies.

1 The Bees enemies are many.
 2 1. The Mouse.
 3 Remedies againſt the Mouse.
 4 2. The Wood-pecker.
 5 3. The Titmouse.
 6 The ſubtil practiſe of the Titmouse.

50 To prevent the death of poore swarmes.
 51 Many killed in swarming.
 52 14. The Weather.
 53 In Summer heat hurteth the Bees.
 54 In Winter the Sun-shine in frost and snow.
 55 The Remedy.
 56 Also the Easterne winds and great frosts.
 57 And the cold continued maketh them sicke.
 58 The raine rotteth the Hives.
 59 The Remedy.
 60 The greatest losse by weather is in the spring: for
 then infinite multitudes are beaten downe, la-
 den and weary, with stormes and wind.
 61 At the rising of a Cloud they post home.
 62 Yet will they goe a field in the midle of a warme
 showre.
 63 How to restore Bees to life.
 64 The wind causeth many to be drownd.
 65 The Remedy.
 66 The last and worst enemy of all.

The Contents of the eighth Chapter, concerning the Feeding of Bees.

1 In seuen moneths the Bees spend of the flocke.
 2 Three sorts of swarmes diuersly prouided.
 3 The first sort.
 4 The second.
 5 The third onely are to be fed.
 6 Stockes out of poure never to be fed.
 7 Try your swarmes in Virgo.
 8 What quantity of Honie is requisite.
 9 Try againe in Pisces or Aries.
 10 The Bee food.
 11 Priuate feeding.
 12 Carelesse feeding is starving.
 13 Publike feeding.
 14 The first time of feeding.
 15 The second time of feeding.
 16 The thrid time of feeding.

The Contents of the ninth Chapter, concerning the Remouing of Bees.

1 Five things to be avoided in remouing Bees.
 2 Remoue a sware in faire weather.
 3 Not in Winter.
 4 Nor in Summer.

5 The Autumn & Spring are fit times for remouing.
 6 Libra the best moneth in all the yeere.
 7 When to remoue a sware.
 8 The time of the day, and manner of remouing.
 9 The vsuall manner of remouing.
 10 Which is fit for poore stalls.
 11 How a good stall is to be carried.
 12 How a bad.
 13 What to doe when they are brought home.
 14 And what when they are seated.

The Contents of the tenth Chapter.

Part. 1. concerning the taking of the Combs.

1 The first kinde of Vindemiation.
 2 The best time for killing Bees.
 3 What stalls are to be taken.
 4 The manner of killing Bees.
 5 Sundry meanes to kill Bees.
 6 The Bees being dead, house the Hive.
 7 The second kinde of Vindemiation.
 8 The time and manner of Driving Bees.
 9 This Driving of Bees unprofitable.
 10 The Honie taken is little and naught.
 11 And the Bees driven, few and poore.
 12 Another kinde of driving.
 13 At two times.
 14 Driving in Virgo.
 15 The manner of driving in Virgo.
 16 How to helpe thoſe driven Bees that want.
 17 Driving in Pisces.
 18 How to rewaine thoſe that are chilled in driving.
 19 A third kinde of Vindemiation.
 20 Exection used at two times.
 21 What part to be exected is uncertaine.
 22 Exection ancient, but not profitable.
 23 Neither first.
 24 Nor second.
 25 Specially for our Country.

Part 2. concerning the trying of Honie and Wax, and the making of Methe.

1 The Combes to be diuided into three parts.
 2 Necessary Instruments being first prouided.
 3 The dressing of the first part for Honie in two
 shoots.

4 The fift shoot for fine ordinary Honie.
 5 Or for Virgin-Honie, which is most fine.
 6 Two sorts of Virgin-honie.
 7 Corne Honie got out by water or fire.
 8 The second shoot for cowst Honie.
 9 The dressing of the first part in one shoot.
 10 The vulgar Honie grossly handled.
 11 The working of Honie, and how to helpe it.
 12 Diuers Countries yeld diuers kinds of Honie.
 13 How to know good Honie.
 14 Good Honie will standing waxeth hard and white.
 15 The best of the Honie is in the bottome.
 16 The dressing of the second part for Meth.
 17 How to make the Meth-liquor in two shoots.
 18 Two sorts of Hydromel, Mede and Methæglen.
 19 When the liquor is strong enough for Mede.
 20 What proportion of water to Honie.
 21 How and how long the Must must be boyled.
 22 The receipt of Spices.
 23 How the Must is to be used when it is boyled.
 24 The making of Methæglen.
 25 The Queenes Methæglen.
 26 The dressing of the third part for Wax.
 27 First boyle it with water.
 28 Then strain it by presing.
 29 Next make the Wax into Balls.
 30 Last of all melt it and cast it in a mould.
 31 And keepe the cake from cracking.
 32 How to know good Wax.

Part 3. concerning the vertues of Honie, Meth, and Wax.

1 The properties and vertues of Honie.
 2 Against both outward and inward griefes.
 3 For whom Honie is best.
 4 English Honie.

5 Too much honie unholisme.
 6 The different operations of raw and boyled Hony.
 7 Two waies to clarifie honie.
 8 The quintessence of Hony.
 9 The vertues of it.
 10 The making of it.
 11 The vertue of Honie in Confectiones.
 12 Marmalade made of honie.
 13 Marpane.
 14 Preserves.
 15 Conserues.
 16 Syrups.
 17 Honie to be preferred before Sugar.
 18 Hony good in outward Medicines.
 19 A Salue for an old sore.
 20 An other.
 21 The properties and vertues of Mede and Methæglen.
 22 Meth much used of the ancient Britaines.
 23 Whence Meth and Methæglen haue their name.
 24 The properties and vertues of naturall Wax.
 25 Artificiall Wax.
 26 To make white Wax.
 27 To make red Wax.
 28 To make greene Wax.
 29 Oile of Wax.
 30 The vertues of it.
 31 The making of Oile of Wax.
 32 The vertue of Wax in compound medicines.
 33 A Cerecloth.
 34 A Cerecloth to refresh the Sinewes and Muscles.
 35 A Cerecloth to comfort the stomacke.
 36 A Cerecloth for the Wormes.
 37 A Salue for a greene wound.
 38 Another.

THE



THE FEMININE MONARCHIE,

OR
The Historie of B E E S.

CHAP. I.

*Of the Nature and properties of Bees, and of
their Queen.*



Mong all the Creatures which our bountifull God hath made for the vse and seruice of man, in respect of great profit with small cost, of their vbiquitie or being in all Countries, and of their continuall labour and comly order, the Bees are most to beadmired.

For first with the provision of a Huie and some little care and attendance, which need be no hindrance to other businesse, but rather a delightfull recreation amid the same; they bring in store of sweet delicates, most holesome both for meat and medicine, *Fruitus apum ab omnibus desideratur & queritur: nec pro personarum diversitate discernitur, sed indiscreta sui gratia regibus pariter ac medicisribus aequali suavitate dulcescit: nec solum voluptati, sed etiam saluti est.* And an other saith, *Mille ad usus vita laborem tolerant & opera conscient: as they well know, who know the rare vertues of Honie and Waxe: a taste whereof I will giue you in the last chapter.*

*I
Bees yeeld great
profit with small
cost.*

Ambrosius
Hexamer. 1.5.
cap. 21.

Plin. nat. hist.
1.11. c. 5.

2.

Every Country
fit for Bees.*strong or fertile.*3.
Bees abborre
illeness.Plin. nat. hist.
LII. c. 5.4.
Bees haue a Com-
mon-wealthe.Nat. hist. li. II.
c. 5.5.
Their working,
watching, fight-
ing, dwelling,
dyet, wealth, and
young ones are all
in common.

Arist. hist.

anim. lib. 9.

cap. 40.

Ambr. Hex. lib.
5. cap. 21. & Ba-
sil. Hexam. Ho-
mil. 8.6.
Bees abborre loy-
all to their Soue-
raigne.

V. Prefat.

Virg. Georg.

V. c. 7. n. 27. &

42.

Secondly, whereas non omnis fert omnia tellus, some Coun-
try yeeldeth one fruit, some an other ; some beareth one
graine, some an other ; some breedeth one kinde of Cattle,
some an other ; there is no ground (of what nature soever it
be, whether it be hot or cold, wet or dry, hill or dale, wood-
land or champion, meddow, pasture, or arable: in a word,
whether it be battle or barren) which yeeldeth not matter
for the Bee to worke vpon.

And thirdly, in their labour and order at home and a-
broad they are so admirable, that they may be a patterne vnto
men, both of the one and of the other. For vnlesse they
be let by weather, weaknesse, or want of matter to worke on,
their labour neuer ceaseth. In admiration whereof, one saith,
*Quos efficacie industriaq; tanta comparemus nervos? Quas vi-
res? Quos ratione medius fidius viros?* And for their order, it
is such, that they may well bee said to haue a Common-
wealth, since all that they doe is in common, without any
priuate respect. *Nihil norunt nisi commune:* They worke for
all, they watch for all, they fight for all. In their priuate quar-
rels, when they are from the Hiue or common treasury, how-
soever you vse them, they will not resist, if by any meanes
they can get away. *Cum ruri sint, nec sibi invicem, nec ullis
alijs nocent; at verò apud suos alveos pugnant acerrime.* Their
dwelling and dyet are common to all alike: they haue like
common care both of their wealth and young ones. *Sole in
enī genere animalium communem omnibus sobolem habent,
unam omnes incolunt mansionem, unius patriæ clauduntur limi-
ne, in commune omnibus labor, communis cibus, communis ope-
ratio, communis usus, & fructus est.* And all this vnder the
gouvernement of one Monarch, of whom aboue all things
they haue a principall care and respect, louing, reuerencing,
and obeying her v: in all things.

*Præterea reg. non sic e Egyptus & ingens
Lydia, nec pepuli Parthorum aut Medus Hydaspes
Obseruant: rege incolumi mens omnibus una est:
Amisso rupere sidem; constructaq; mella
Diripiunt ipse, v: & erates solvēre favorum:
Ille operum castos, illum admirantur; & omnes*

Circumstantia

and of their Queene.

C. I.

*Circumstant tremitus denso, stipantq; frequentes,
Et sape astollunt humeris, & corpora bello
Objecant, pulchramq; petunt per vulnera mortem.*

If she goe forth to solace her selfe, (as sometime she will) many of them attend her, guarding hir person before and behinde; they which come forth before her, euer now and thena returning, and looking backe, and making withall an extraordinaire noise, as if they spake the language of the Knight Marshals men, and so away they flye together, and anone in like manner they attend her backe againe. This I may say, because I haue seene it: although the Philosopher be of an other minde: *Reges, saith he, nunquam foris visitantur, nisi cum migratur.* If by hir voyce she bid them goe, they swarne: if being abroad she dislike the weather, or lighting-place, they quickly returne home againe: while she cheereth them to battaile, they fight, v: while she is well, they are cheerefull about their worke; if she droope and dye, they will neuer after enjoy their home, but either languish there till they be dead too, or yeelding to the Robbers, v: fly away with them v: *Rege mortuo meret plebs ignava, non cibos convehit, non procedit, tristi tantum marmure glomeratur circa corpus ejus.*

But if they haue many Princes, as when two flye away with one swarne, or when two swarmes are hiued together; they will not be quiet till one of the be cassiered: which sometime they bring downe that euening to the mantle, v. where you may finde her couered with a little heape of Bees: otherwise the next day they carie her forth either dead or deadly wounded. Concerning which matter, I will here relate one memorable experiment. Two swarmes being put together, the Bees on both sides, as their manner is, made a murmuring noise, as being discontented with the suddain congresse of Strangers: but knowing wel that the more the merrier, the safer, the warmer, yea, and the better prouided; they were quickly made friends. And hauing agreed which Queene should reigne, and which should die, three or four Bees brought one of them downe betweene them, pulling and haling her as if they were leading her to execution: which I by chance perciuing, got hold of her by the wings, and with much adoe

*Hist. an. I. 9,
cap. 40.*

*Bees servit
not the loys
of their
Queen.*

*V. c. 7. n. 35.
V. c. 7. n. 42.
Nat. hist. li. II.
c. 17.*

*Bees endure no
government, but
a Monarchie.*

V. c. 5. n. 46. & 6

47.

*A memorable
experiment.*

*The
Union
of Swarms.*

“ tooke her from them. After a while (to see what would
 “ come of it) I put her into the Hiue againe : no sooner was she
 “ among them, but the tumult began afresh, greater then be-
 “ fore, and presently they fell together by the eares, fiercely
 “ fighting and killing one another, for the space of more then
 “ an houre together : and by no meanes would cease, vntill the
 “ poore condemned Queene was brought forth slaine and
 “ laid before the doore. Which done, the strife presently en-
 “ ded, and the Bees agreed well together.

*When a Swarne
 is added to another
 the Bees fight to death
 one Queen.*

Many Queens.

Somtime when one swarne is put to another, though they
 do not fight, yet will they not agree of their choice in two or
 three daies, keeping their Queenes close on both sides. But
 then all this while they neuer be at quiet day nor night, nor
 once offer to work, vntill one of them being deposed, they be
 vnited in the other. *Vide piura super barre c. 5. n. 74. 75. 76.*

Likewise if the old Queene bring forth many Princes (as
 she may haue six or seuen, yea sometime halfe a score or more,
 which superfluitie nature affoordeth for more suretie, in case
 some miscarrie) then, lest the multitude of Rulers should di-
 stract the vnstable Commons into factions, within two daies
 after the last swarne, yea sometime (when vnkinde weather
 keepeth him in ouer long) euен before he come forth, you
 shall finde the superfluous Princes dead before the Hiue: I
 haue taken eight of them vp together brought out of one
 hiue, when two were alreadie gone forth with their swarnes.
 For the Bees abhorre as well Polyarchie, as Anarchie, God
 hauing shewed in them vnto men, an expresse patterne of A
**PERFECT MONARCHIE, THE MOST NATVRAL
 AND ABSOLVTE FORME OF GOVERNMENT.**

Hom. II. a.

*9.
 The description
 of the Queen-
 Bee.*

Our dñs dñs mñvñkogtñ, ñs nñggvñs ñw.

The Queene is a faire and stately Bee, differing from the
 vulgar both in shape and colour : hir backe is all ouer of a
 brighter browne : hir belly euен from the top of hir fangs,
 to the tip of hir traine, is of a sad yellow, somewhat deeper
 then the richest gold. Shee is longer then a hony-Bee, by
 one third part, that is, almost an inch long : shee is also
 bigger then a hony-Bee, but not so bigge as a Drone, al-
 though somewhat longer : hir head proportionable, but
 that

that it is more round then the little Bees, by reason hir fangs be shorter: hir tongue not halfe so long as theirs: for whereas they gather with the one, Nectar, with the other, Ambrosia; v. shee hath no need to vse either, beeing to be maintained, as other Princes, by the labour of hir subiects: hir wings of the same size with a small Bee, and therefore in respect of hir long body, they seeme very short, resembling rather a cloake then a gowne; for they reach but to the middle of hir traine or nether part: hir legges proportionable, and of the colour of hir belly, but her two hind-legges more yellow: hir nether part so long, and halfe so long as hir vpper part, more picked then a small Bees, hauing in it soure ioynts or partitions, and in each ioynt a golden barre, in stead of thosethree whitish rings which other Bees haue at their three partitions. The speere she hath is but little, and not halfe so long as the other Bees: which, like a Kings sword, is borne rather for shew and authority, then for any other vse. For it belongeth to hir subiects as well to fight for her, as to prouide for her. *Plinie* wri-
te thus doubtingly of it: *Non constat inter authores Rex nullumne solus habeat aculeum, majestate tantum armatus, an dederit eum quidem natura, sed usum ejus illi tantum negaverit: illud constat imperatorem aculeo non uti.* But *Aristotle* doth truly approue the later opinion, as certaine: *Reges aculeos habent, sed non utuntur. Quocirca carere eos aculeis non nulli existimant.* *Plinie* describeth them thus, *Omnibus forma semper egregia, & duplo quam ceteris major, penna breviores, crura recta, ingressus celsior, in fronte macula quodam diadema candicans: Multum etiam nitore à vulgo diffirunt.* If you desire to see this stately Prince, read cap. 5. n. 34. The breeding of her you may see c. 4. n. 18.

Besides their Soueraigne, the Bees haue also subordinate Gouernours and Leaders, not vnfitly resembling Captaines and Coronels of Souldiors: For difference from the rest they beare for their crest a tuft or tostell, in some coloured yellow, in some murrey, in manner of a plume; whereof some turne downward like an Ostrich-feather, others stand vpright like a Hearn-top. And of both sorts some are greater

V.6. n. 17.

Nat. hist. I. 11.
cap. 17.Hist. an. I. 5. cap.
21.Nat. hist. I. 11. c.
16.

10. *Captains*
Bees haue also in-
ferior Gouer-
nors or Captains.

11. *which are known
by peculiar
markes.*

Captains or Leaders
seen only in May.

Phizy Nat. hist. li. 11.
c. 17.

Plin. Nat. hist.
B. 11. c. 5.

Vir. Geor. 4. v. 219. His equidem signis atque hec exempla sequuntur.

Esse apibus partem divina mentis, & harustus

Ethereos dixerunt. Deum Manuque iuc per omnis

Lea alia & aliis more

Aristotle maketh two sorts of Bees, the one (which is best) short, diuers coloured, and round; the other long, like vnto waspes. Optimum genus apum que breves, varia, & in rotunditatem compactiles; secunda qua longa & vespis similes. And in another place he putteth a difference betweene wilde and tame : saying, Differunt inter se apes parentibus nate urbanis, & qua rustico montanoque victu educatis prodierint: sunt enim basilvestres horridiores aspectu, & iracundiores, & minores; sed opere & labore prestantiores. Whom Plinie followeth almost verbatim : saying, Apes sunt etiam rustica sylvestresq; horrida aspectu, multo iracundiores; sed opere ac labore prestantiores. Urbanarum duo genera: optima breves, varia, & in rotunditatem compactiles; deteriores longa, & quibus similitudo vespam, etiamnum deterrime ex ijs pilosa. But these differences my experiance hath not found: neither doe I see how they can be; seeing the swarmes of tame Bees doe often flie into trees, and so become wilde; and the swarmes of wilde Bees are not seldome found, and put into huies. Indeed the wilde are more angry then the tame: but that is because they are lesse vsed to the company of men. Moreouer, there is some difference in the bignesse of Bees: For they that are loaded seeme greater and longer then those that

12.
Two sorts of Bees.

¶ Hist. li. 5. c. 22.

¶ Hist. 19. c. 40.

¶ Nat. hist. li. 11.
c. 18.

Pliny says lib xii c 17 about the King
there are certain Lictors & officers
constant protectors & supporters
of his authority.

likewise lib xii c v. they have a
republican or commonwealth
& Leaders, holding councils together.

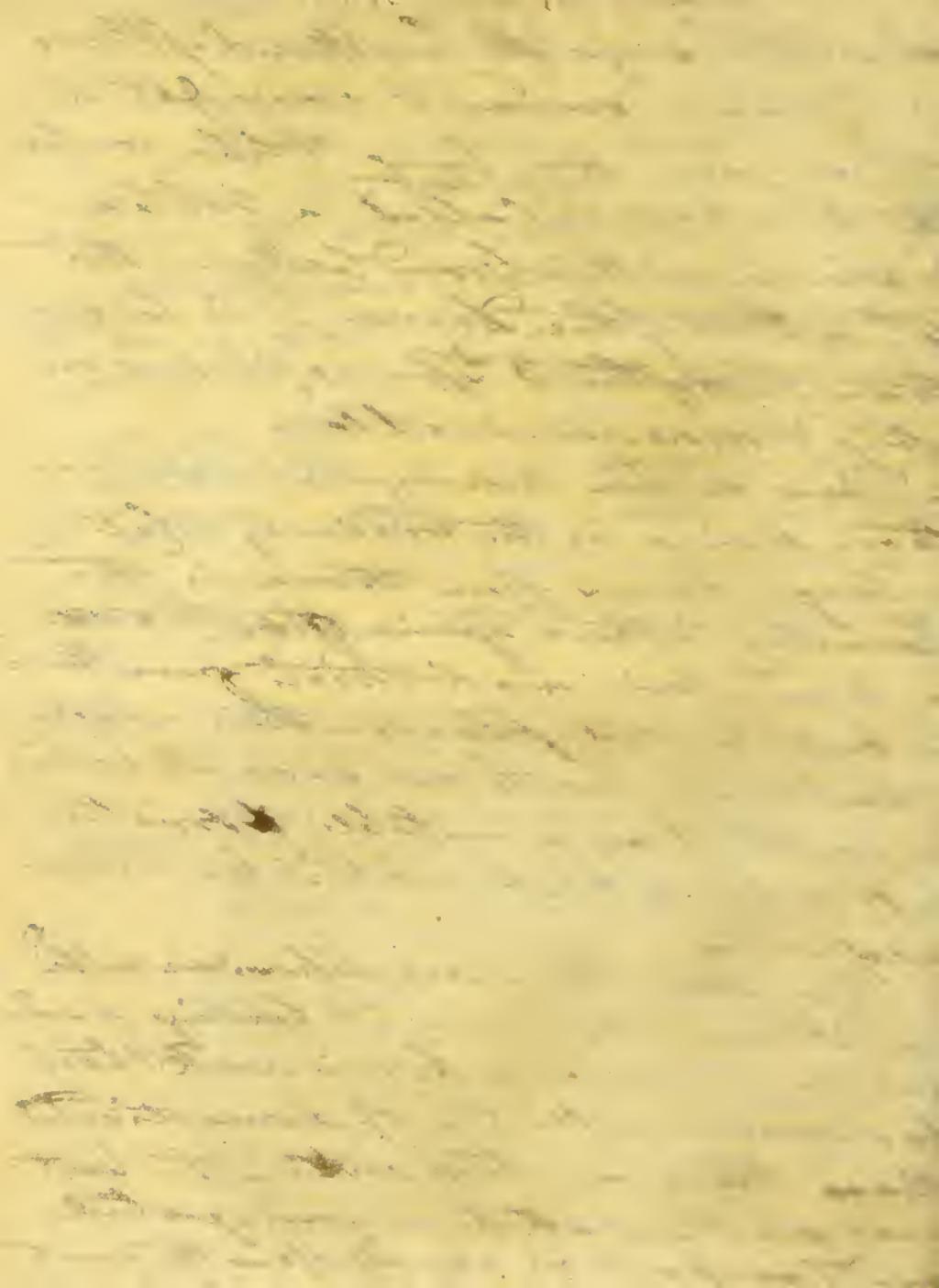
brige. Georg: W. C. 219.

Some from these appearance. Following
up these examples, have said that there
is been a portion of divine Mind & draught
ethereal: of that the Deity pervades, all
Land - and the tracts of the Sea and the
Sky. - That hence flocks - herds, - Men
all the race of Beasts or wild Beasts -
each at birth derive their slender lives
accordingly that all of them afterwards
return thither, and dissolved, are brought
back: that nothing perishes: but that
alive they fly each into his order as
star, and succeed to the softy sky "

And ^{the} Bee says the 1st & 2nd species
are small round & variegated
the second are long & like warts
the 3rd Laburnum is called a Hobble-
is black with a broad belly - the
4th is that of the Drone, it is larger
than that of the 3rd species, it has no
sting & moreover is idle.

b. Bees differ among themselves
those living in the vicinity of cities
or large towns from those in the
Country & there again those
in mountainous districts from those
in cultivated places - those which
inhabit the forests are more ill looking
in aspect & more irritable & smaller
but in work & labor & tool far more
excellent -

c. Pliny says there are likewise wild
Bees, which are ill looking and
far more irritable but in work & tool
far more excellent. Of domesticated
Bees there are two sorts - the best
are short-spotted or variegated
and compact in roundness - the worst
are long and such as resemble warts
~~are the~~ ^{the} worst & the hairy Bees are the
worst of all.



that are leere: also the Nymphs, *v.* when they come first abroad, are not growne to their full bignesse which afterward they haue, and the old ones doe wither, and become little againe. *v.* Likewise in these three ages their colours also do varie: for in their middle age they are browne, whereas before they are more pale, *v.* and at the last they turne whitish againe. *v.* But these are differences of Bees in the same stall, and not of one stall from an other, since these diuers sorts are in every stall.

*V. 6.4.2.20.**V. n. 56.**V. c.4. n. 17.**V. n. 56.*

The seuerall parts of a Bee haue their seuerall vses.

Hir horns growing in the middle of hir forehead, with two ioynts, one close to the head, the other towards the middle, so that she can put them forth at full length when shee will, and draw them in againe close to hir head; are the proper organum of the sense of feeling; by which, with the least touch, the Bee sodainely senteth any tangible obiect: and therefore they serue to giue warning in the darke, and when she is busie, of any obuious thing quicke or dead that might offend her.

Hir two cheeke being transparent, like Lanthorne, doe serue, though immoueable, in stead of Eyes: through which the species of things visible are conueied to the common Sense.

For gathering hir prouision, shee hath two instruments, hir fangs and hir tongue: hir fangs in fashion of a paire of pincers hang not, as the iawes of other things, one ouer an other, but side-way one against the other, as is most conuenient for hir vses.

Hir tongue is of that length, that hir mouth cannot hold it: but being doubled between hir fangs vnder hir chinne, it reacheth to the necke. It is diuided into three parts: whereof the two outmost serue as a case to couer the third, which being the chiese, the Bee in hir worke putteth forth beyond the other, and draweth in againe as shee will. And this third part is likewise parted into three, so that there are five in all.

To set these instruments on worke, Nature hath furnished her with 4. wings, which swifter then the East-winde, carry her into all the foure coasts of the world, and thence with

13.
The parts of a Bee.

14.
Hir horns.

15.
Hir eyes.

16.
Hir fangs.

17.
Hir tongue, with the parts of it.

18.
Hir foure wings.

with her precious lading beare her backe againe, vntill her incessant labour hath worne them out. v. n. 56.

19.
Hir feete.

Hir rough and dew-clawed feete apt to take hold at the first touch are in number sixe, that shee may stand fast vpon foure, while she vseth the other two to wipe her eyes; her wings, her tongue, or any other part, and to conuay the gathering of her fangs to her thighes. v. c. 6. n. 18.

20.
Hir two weapons

21.
Hir fangs com-
monly used a-
gainst insecta.

For her defence she is doubly weaponed. Hir fangs shee vseth when she is not much angry, against all *insecta*, as other Bees, Drones, Wasps, &c. therewith pinching and holding them commonly by the legs or wings, and sometime by the hornes: but this is rather a chiding, then a fighting, and a warning, rather then a punishment; though withall sometime she bend her speere against them, as if shee would kill and slay.

22.
Hir speere some-
time.

V.n.31.

V.c.7.n.36.

V.c.7.n.49.

Nat.hist.l.11.
c.13.

23.
Stinging present
death to Bees.

Hir speere she is very loth to vse, if by any other meanes she can shift her enemy, as knowing how dangerous it is to her selfe: for if she chance therewith to strike any hard part, as the brest or shoulder, shee is enforced to leaue her speere behinde her, and so she killeth and is killed v. with the same stroke. Yet when the Bees are very angry; as namely when they are assaulted with a multitude of robbers at once, v. or when in the spring a hungry stall forsaking his owne home presteth into their huie, v. they fall sodainly vpon them with their poysoned speeres (*Apibus natura cuspides dedit, & quidem venenatas*) but then they make short worke. For by that time they haue put vp their weapons, some die presently & others losing the vse of their wings tumble on the ground like mad things, vntill in a while they lose their liues too: others when they are wounded, runne away in great haste (as hauing their errand) either drawing on the ground one or moe of their legs, or doubling their nether part toward the ground, or turning the same awry to the one side or the other: but as many as are stricken, within an houre after will not bee able to wag out of the place, and within two or three at the most, they will be quite dead. I haue looked on, while thus they quickly cut off a whole stall, and among the rest, making then no difference, they spared not the

the Queene her selfe. After this manner doe they deale with the Drones at the time of the yeere, when they will not otherwise be beaten away. v.c.4.n.24.

But their speares or stings they vse chiefly against things of other sort, as men, beasts, and fowles: which haue outwardly some offensiuе excrement, as haire or feathers, the touch whereof prouoketh them to sting: although such stinging be alwaies mortall to themselues (as anone is shewed, v.) For the skinne hauing receiued the sting, holdeth it so fast, that when they would be gone, they leaue both it and part of their entrals which are fastned to it. *Aculeum apibus natura dedit ventri consertum.* If they light vpon Poultry, although their desire bee to the quicke, if they can quickly come at it; yet will they put forth their speares as soone as they touch the feather: and if they chance to hit the hard part thereof, the sting sticketh fast, as in the skinne; and therefore Goose-wings are naught to be vſed in the hiusing of Bees.

Likewise, if they light vpon the haire of your head or beard, (saue onely when they come home loaden, or the wea-ther is cold) they will sting, if they can reach the skinne; al-though Wooll and Woollen doe not offend them: and if being otherwise angered, they strike their speares in Wool-len, they can easily pull them out againe. But the nap of new Fustian displeaseth them, because it seemeth hairy; and the stiffe is so fast, that it holdeth the sting. Wherefore such ap-parell is not fit among Bees: as also Leather in Gloues or otherwise, for assoone as they touch it they will strike, if they be any whit moued, and their speares they cannot recover againe. Velvet in facing of hats or else-where, doth anger them as much as any thing, making them strike assoone as they touch it: but it hath not power to hold their speare.

When they are angry, their aime is most commonly at the head, and chiefly about the eies, as knowing that there they may do most harme, for that part swelleth most and longest: and yet I neuer heard that any euer stung the verie eye, as if they were forbidden to touch that tender part. But the bare

^{24.}
The speares com-
monly vſed a-
gainſt other crea-
tures.

^{25.}
Haire and sea-
thers caſe the
Bees to sting.

^{26.}
V. n. 31.
Nat. hist. I. II.
c. 18.

^{26.}
Wooll and wool-
len doe not of-
fend them.

^{27.}
Fustian, Leather,
and Velvet
naught among
Bees.

^{28.}
The Bees in their
anger aime at the
head.

hand that is not very hairie, they will seldom or never sting, vnlesse they be much offended.

29.
When any is stung,
the company must
be gone.

When you are stung, or any in the company, yea though a Bee haue striken but your clothes, specially in hot weather, you were best be packing as fast as you can: for the other Bees smelling the rauicke fauour of the poysone cast out with the sting, will come about you as thicke as haile: so that fitly and liuely did he expresse the multitude and fiercenesse of his enemies, that said, *They came about me like Bees.* Then is there no way to appease them but flight: the more you resist, the fiercer they are. They are like vnto incerrigible shrewes: there is no dealing with them but by patience: though when they sting they are sure to haue the worst. For the wound endangereth neither life nor limb: two nights sleep will take away the swelling, and two minutes the paine, (vnlesse it be in very rheumaticke or humorous bodies: of which sort I haue knowne some so twollen and disfigured with that little stroke, that you could scarce know them by their fauour in fve or sixe daies after.) But on the other side, whereas the Waspe, Hornet, and Dorre, doe sting often without any hurt to themselues; the Bee never stingeth but once, and then she leaueth hir speere and entrals, more or lesse behinde her, *Animamq; in vulnere ponit.* (*Intercunt quæ percasserint, quoniam sine intestini eruptione aculeus eximi non potest.*) For within foure and twentie houres after, or, if much of hir entrals come forth with the sting, within halfe that time, she dieth. But the speere retentinge life when the Bee is gone, if it be not presently pulled out, will worke it selfe into the flesh vp to the hard end, and so cause the paine and swelling to be both greater and longer. Therefore when you are stung, instantly wipe off the Bee, sting and all, and wash the place with your spittle: so shall you preuent both paine and swelling, which otherwise nothing but time can cure: for the poiton is so subtil, that it quickly pierceth the flesh, and the wound so little, that no Antidote can follow after: and yet I haue heard commended for a remedie, the iuyce of Houseleekke, of Rue, of Mallowes, of Luie, of a Marigold leaf,

30.
The Bees haue the
worst when they
sting.

31.
They lose their
sting and entrals,
and consequently
their lives.

Virg. Georg.
Hist. an. I. 9.
c. 40.

Animasq;

in vnlucke
ponent

32.
The speere of it
selfe pierceth dec-
per when the Bee
is gone.

33.
How to preuent
the paine and
swelling.

34.
Nothing but time
can cure their
stinging.

leaf, of Holyhock and Vineger, of Salt and Vineger, and diuers other things. *Id malva peculiare est, ut imposta ictibus vesparum & apum dolores levet.* Fern. Meth. l. 6. cap. 4. *Stercus vaccinum vesparum ictus sanat, & indito aceto tumores digerit.* Fern. Meth. l. 5. cap. 27. Rue drunken with Wine, or rather with Hydromel, or the leaues stamped with Honie and Salt, and laid to the wound, is good against stinging of Bees, Wasps, Hornets, and Scorpions; *Dodoens, l. 2. c. 83.*

*Verum hoc mihi pra ceteris probatur remedium. Ut pri-
mum se quis ictum senserit, aculeum adhuc epidermoidi inha-
rentem cum ipsa ape instanter abstergat (nam si paulisper sis-
tatur, dum veram cutem penetraverit; vehementior inde, diu-
tum, & sanata difficilior evadet tum dolor tum tumor)* MT.
*dein, quam mox reddi potest, propriâ vulnus urinâ malva folia
sæpiuscule proluant, dum subsequens hoc comparetur empla-
strum. & Cardui Benedicti virentis contriti* M.I. Ovi albumen
*quasi in oleum coagitatum: misce, fiat emplastrum, quod lini
retrimentis impositum, vulneri linteo alligetur: ubi aruerit,
recens repone: sed vulnus nequaquam fricetur.*

But if thou wilt haue the fauour of thy Bees that they sting thee not, thou must auoid such things as offend them: thou must not be (1) vnchaste or (2) vncleanely: for impuritie and sluttishnesse (themselues being most chaste and neat,) they vitterly abhorre: thou must not come among them (3) smelling of sweat, or hauing a stinking breath, caused either through eating of Leekes, Onions, Garleek, and the like; or by any other meanes: the noisomnesse whereof is corrected with a cup of Beere: and therefore it is not good to come among them before you haue drunke: thou must not be giuen to (4) surfeiting and drunkennesse: thou must not come (5) puffing and blowing vnto them, neither hastily stirre among them, nor * violently defend thy selfe when they seeme to threaten thee; but softly mouing thy hand before thy face, gently put them by: and lastly,

ceiuing it by the strong smell of the humour (for she smelleth then as if she had stung, v.n. 29.) will be so eager vpon reuenge, that by no meanes can they be pacified, vntill they haue the field.

*Manipulus unus.
one Handful.*

35.
What things the
Bee-master must
auoid.

* Which not
only increas-
eth their an-
ger, (specially
in hot weather,
v. n. 38.) but in-
citeth others
to take their
parts: and if
by striuing and
striking you
chance to kill
one, the Bees
presently per-

C. 1.

Of the Nature and properties of Bees,

36.

The six properties of a Bee-ma-ster.

37.

Safer to walke, then to stand among Bees.

38.

The fittest time to stirre about Bees.

39.

In the heat of the day they are most angry.

40.

How to be armed when the Bees are angry.

thou must be (6) no Stranger vnto them. In a word, thou must be chaste, cleanly, sweet, sober, quiet, and familiar: so will they loue thee, and know thee from all other.

At any time, when nothing hath angred them, one may boldly walke along by them: but if hee stand still before them within the space of a perch in the heat of the day, it is maruell but one or other spying him from the Hiue, will haue a cast at him.

If you haue any thing to doe about your hiues, the fittest time is in the morning, when the Bees are new gone abroad; and in the euening before they be come in: for then the weather being coole, and the company few at home, they are not so apt to be quarrelling, vniuersall they be much prouoked. Likewise at other times of the day, when the weather is cold, wet, or windie, they are patient enough.

But about noone in hot weather, and specially when they haue tasted of the Hony-dewes, they are soone angry, and very eager.

But whensoeuer you haue occasion to trouble their patience, or to come among them being troubled, it is better to stand vpon your guard, then to trust to their gentlenesse. For the safeguard of your face (which they haue most mind vnto) prouide a purf-hood made of course boultering, to be drawn and knit about your collar: which, for more safetie, is to bee lined against the eminent parts with Woollen-cloth. First, cut a peece about an inch and a halfe broad, and halfe a yard long, to reach round by the temples and fore-head from one eare to the other: which being sowed in his place, joyne vnto it two short peeces of the same breddth vnder the eyes, for the balls of the cheekees: and then set another peece about the breddth of a shilling against the top of the nose. In stead of this, you may vse a Cypres Band or a Boulter, hauing a Handkerchiefe betweene your fore-head and it, to beare it out from the skinne, and your hat on your head to hold it fast. And if they be so earnest that you feare stinging your hands, put on a paire of woollen cuffes or gloues. When you haue on this Helmet and Gantlets, as a man armed at all points, you may boldly deale with them, being out of the

the danger of their poysoned speares. At other times when they are not angried, a little peece halfe a quarter broad to couer the eyes and parts about them, may serue: for then, though it be in the heat of the day, vnlesse they may strike about the eyes, they care not to strike at all.

Vnto Cattel which haue not the reason by flight or otherwise to sauе themselves, they are more dangerous. A Horse in the heat of the day looking ouer a hedge, on the other side whereof was a stall of Bees, while hee stood nodding with his head, as his manner is, because of the Flies, the Bees fell vpon him and killed him. Likewise, I heard of a Teeme that stretching against a hedge, ouerthrew a stall on the other side, and so two of the Horses were stung to death. I doubt not but through negligence many such mischances haue happened else-where. For this thing hath beeene long since obserued by that great Philosopher. *Necant (saith he) vel maxima animalia ictu sui aculei: jam equus occisus ab apibus est.*

41
Bees dangerous to
Cattell.

And such are the sorts of Bees, with their integrall parts. Among which, though there do not appear those outward Organa of senting which other Animals haue, nor is seene in the head that inward principall * part, which is the fountaine and seat of all Sentes, Phantasie, and Memorie; yet haue they the Senses themselues, both outward and inward: which their subtill and actiue spirits doe excite and quicken, for the works of their curious Art and singular Vertues. *Quamvis non sint membra que, velut carina, sensus inventant; esse tamen his anditum, olfactum, gustatum, eximia prætere natura dona, soleritiam, animum, artem quis facile crediderit. Creat Deus minima corpore acuta sensu animantia: ut majori attentione stupeamus agilitatem muscae volantis, quam magnitudinem jumenti gradientis.*

Arist. hist. an. I.
9.c.40.

42
The Bees senses.

* Cerebrum com-
mune sentiendi
principium. Fer.
Phl. 5.c.14.

Nat. hist. 1.11. c.

4.

Augustin. de
Genesi ad lite-
ram. lib. 3.

Of all the fwe Senses their sight seemeth to be weakest: & weaker when they come home loaded, then when they are leere: and being loaded weaker on foot, then when they are flying. If, when they come home loaded, they light beside the doore, they will goe vp and downe seeking for it, as if they were in the darke: and vnlesse by chance they hit vpon

43.
Their sight dim.

it, they must flye againe before they can finde it. As many as fall beside the stoole when it waxeth darke, ten to one they lye abroad all night: yea, if at such time being troubled by any thing they come forth from the stoole, though then they be fresh and lustie, they will leape vp and downe, runne and flieto and fro, till they be wearie; but by no meanes can they finde the way in againe. And therefore it is that when they flie abroad, they take such paines at the doore in rubbing and wiping their glazen eies, that they may the better discerne their way forth and backe.

44.
Their smelling
very quicke.

V. c. 6. n. 41.

Lucret. I. 4. 7
See Busby v. 810 - 3

V. c. 4. n. 30.

45.
Hearing and seeing.

Hist. an. I. 9.
cap. 40.

46.
Tastine.

But their smelling is excellent, whereby when they flielost in the aire, they will quickly perceiue any thing vnder them that they like, as Honie, Rozin, or Tarre, though it be couered. As soone as the Honie-dew is fallen, they presently winde it, though the Oakes that receiue it v. be a farre off: which the Poet, speaking of the excellencie of some creatures in this sense before others, doth thus expresse,

—— Ideoq; per auras
Mellis apes, quamvis longè, discuntur odore.

And by this sense they finde out any strange Bee, which is not otherwise to be knowne from their owne company, and that in the darke Hiue: where, when they are disposed, they will by the same meanes cull out the Drones, yea and pull out the Cephens v. that are shut vp in the cells, not medling with any of their owne Sex.

Their hearing and feeling are verie quicke. If you touch their Hiue but lightly, or the stoole, or the ground neere it; they presently perceiuing it, make a general noise: although Aristotle doubt whether they heare, or not. *Quan-quam incertum est an audiant.* But if they did not heare, to what purpose is that musicke made in the Hiues, before the swarming? v. c. 5. n. 18. and in the battaile, vid: c. 7. n. 34. or his tinging of swarmes to make them come downe, v: 67 inc. 5. n. 37.

And of their fist sense I make no question, sithens they are vsed to things of so different tastes: although there may seeme the lesse vse of it, because their smelling is so perfect.

And

And such are their outward senses. The inward qualities of their minds are farre more excellent. Their curious art and workmanship to be admired rather then imitated of men, See cap. 6.

47.
Their vertues.

Their singular vertues are no lesse admirable.

In valour and magnanimitie they surpass all creatures: there is nothing so huge and mightie that they feare to set vp on, and when they haue once begunne, they are invincible: for nothing can make them yeeld but death: so great hearts doe they carrie in so little bodies v. In priuate wrongs and iniuries done to their persons (for which cause men will soonest quarrell) they are very patient: but in defence of their Prince and Common-wealthe they doe most readily enter the field,

— *Et corpora bello*

48.

Fortitude:

V.c.7.n.37.

Virg.

V.n.5.

49.

Prudence and knowledge.

V.c.1.n.4.5.6.

& 7.

Whereby appeareth their singular fortitude, no lesse then their prudence doth in the government of their Common-weale v. beside which, their wisedome and knowledge in other matters is verie much: as of their enemies, of their fellowes and friends, of the Drones, when they haue too many, and when they neede them not at all, also of the times and seasons of the yeare. Their wit and dexteritie, as well in gathering as in working their sweetes, is inimitable. v. Moreouer, as skilful Astronomers, they haue fore-knowledge of the weather. *Preditivant enim ventos imbrresq; & tunc se pleraq; continent testis.* Item, *Presagiant apes & hyenam & imbrres.* v. And in stormy and windie weather, it is a wonder to see what cunning those that are abroad doe vse to shift the wind when they come home loaden: how they flie alow by the ground, among the bushes, in the lanes, and lee-sides of the hedges. *Iuxta terram volant in adverso flatu vepribus bebetas.* But aboue all, one excellent skill they haue, which the most excellent femals, though much they desire it, must yeeld themselues to want: for they know certainly when they breed a male, and when a female: which thing appeareth by this, that they lay their Cephen-seeds in a wide combe by themselues, v. and the Nymph-seedes in the rest, which are of a smaller size, v. So that

V.c.6.
Nat. hist. l.11.

c. 10.

Hist. an. l.9.

c. 40.

V.c.7.n.61.

Nat. hist. l.11.
c. 10.

V.c.6.n.10. &
c.4.n.19.

V.c.6.n.19.

Ambr. Hex. I. 5.
c. 21.

that what wanteþ in the sight of their eies, is fully suppli-
ed in the sight of their minde. *Cum sit infirma robore apis,
valida est vigore sapientie & amore virtutis.*

And yet I haue read of a greater knowledge then all this : How there were Bees so wile and skilfull, as not onely to desrie a certaine little God a myghtie, though he came among them in likenesse of a Wafer-cake ; but also to build him an artificiall Chappell. If I should relate the Storie, all men, I know, would not beleue it : notwithstanding, because euerie man may make some vse of it, you shall haue it.

so.
A strange tale
concerning the
knowledge and
devotion of Bees.

A certaine simple woman hauing some stals of Bees which yeelded not vnto her hir desired profit, but did consume and die of the murraine ; made hir mone to an other Woman more simple then hir selfe : who gaue her counsell to get a consecrated Host, and put it among them. According to whose aduice she went to the Priest to receiue the Host : which when she had done, she kept it in her mouth, and being come home againe she tooke it out, and put it into one of hir Hiues. Whereupon the murraine ceased, and the Honie abounded. The Woman therefore lifting vp the Hiue at the due time to take out the Honie, saw there (most strange to be seene) a Chiappell built by the Bees, with an altar in it, the wals adorned by maruellous skill of Archite-
ture, with windowes conueniently set in their places : also a doore and a steeple with bells. And the Host being laid vpon the altar, the Bees making a sweet noise, flew round about it.

But whether this doe more argue the supernaturall knowledge and skill of the Bees, or the miraculous power of the Host, or the spirituall craftinesse of him, whose comming is by the working of Satan with all power and signes and lyng wonders, some scrupulous ^{*}Skeptick may make a question : and presuming to examine every particular circumstance ouer narrowly, will make obiections against the truth of the Storie : which, by their leaues, in the behalfe of my Authour, I must not spare to answer. First, it may be they will obiect that the Host being held so long in the Womans mouth, could not choose in that space but melt and marre.

Indeed,

* A Gellius, I.
11. c. 5.

Bounce

Indeed, if it did remaine, as it was, a Wafer-cake, this were likely enough: but being turned into fleshi, the case is altered. If they shall say that because it was now Honie-haruest, at which time good stals, such as this was, are full of Wax and Honie, that therefore there could not be roome enough for a Chappell with a steeple and bells in it; I answer, that this is as weake and simple as the former. For seeing it is knowne that a Blacke-smith of *London* did make a Locke and a Key so little that a flye could draw it; why should not the little Smith of *Nottingham*, which doth the worke that no man can, frame a little Chappell in a little roome? But then perhaps they will reply, if wee grant you this, yet how could the Bees flie about the altar in that little Chappell, seeing they are scarce able to flie in so narrow a close roome as the emprie huie? As for that, it may be a mistaking of a word: haply the woman said they did but crawl. If they shall aske how the woman could see the altar with the Host standing in the Chancell, and the Bells hanging in the steeple, seeing the waxen walls were not transparent; they may easily thinke that the Bees would giue their dame leaue to looke in at the windowes. And if they shall say that those bells being made of such metall would giue but a weake sound, when they were rung to Mattins; they must consider the Parishioners dwelt not farre off. And so I thinke these captious Critics will hold themselves satisfield.

Vnto this Storie my Author immediatly addeth an other, like vnto it, and as likely: how certaine Theeues hauing stollen the Siluer Box wherein the Wafer-Gods vse to lye, and finding one of them there, being loth, belike, that hee should lye abroad all night, did not cast him away, but laid him vnder a Huie: whom the Bees acknowledging, aduanced to an high roome in the Huie, and there in stead of his siluer boxe, made him another of the whitest Waxe: and when they had so done, in worship of him, at set houres they sung most sweetly beyond all measure about it: yea the owner tooke them at it at midnight, with a light and all. Wherewith the Bishop being made acquainted, came thither with many others: and lifting vp the Huie, hee saw there

neere the top a most fine boxe, wherein the Host was laid, and the Quires of Bees singing about it, and keeping watch in the night, as Monkes doe in their Cloisters. The Bishop therefore taking the Host, carried it with the greatest honour into the Church : whither many resorting, were cured of innumerable diseases.

I doubt not, but some incredulous people will quarrell this Storie as well as the former : making question, since the combs in the top of the Hiue, are not past halfe an inch one from an other, how there could be roome for a boxe of that bredth that would containe the Host; and then being there, how it might be seene by the Bishop, seeing those spaces are alwaies filled with Bees, and the Storie saith, that they were then singing about it: and therefore perhaps they will suspect the whole Narration, supposing it rather to be an vnadvised deuice of some idle Monke, which, if he had consulted with them that haue skill among Bees, might haue made his tale more probable. Alledging moreouer, that therefore there is no mention made of any particular person, time, or place, lest the circumstances should disproue the matter it selfe. All which obiections I could as easily answer as the former, if I thought it needfull; But now because some may be as ready to mistrust my relation, as others are to obiect against the truth of the Stories; I will here in mine owne behalfe for their satisfaction, set them downe in my Authors owne words.

Cum mulier quedam simplicis ingenij nonnulla apum alvearia possideret, neg. illa redderent expetitum fructum, sed lue quadam tabescentes morerentur; de consilio alterius famina simplicioris, accessit ad sacerdotem perceptura Eucharistiam: quam sumptam tamen ore continuit, domumq; reversa extra etiam collocavit in uno ex alvearijs. Lues cessavit, mella affluabant. Itaq; suo tempore mulier, apertis, ut mel educeret, alvearijs, vidit (miranda res) exadiscitatum ab apibus facelum, constructum altare, parietes miro Architectura artificio suis fenestris apposite suis locis ornatos, ostium, turrim, cum suis tintinabulis: Eucharistiam vero in altari repositam circumvolabant suavi susurro perstrepentes apes.

Nam miranda
canunt, sed
non credenda
Poeta.

The

The other he reporteth thus. *Quidam fures, ut argenteum vasculum in quo condita erat Eucharistia auferrent, & illam secum rapuerunt: sacratissimum vero C. corpus sub alveari pro- jecerunt. Post aliquot dies Dominus alvearis videt apes certis horis sapient, dimissis operis ad cibos convehendos, totos esse in quodam mellis suo concentu edendo. Cumq; forte de media nocte exsurrexisset, conspiratur supra alveare illustrissimam lucem, suavissimeq; prater omnem modum modulantes apes. Rei no- vitate inistrata, & prorsus admirandâ percusus, Dei q; moni- tu inimico agitatus res desert ad Episcopum. Is plurimis se- cum assumptris eo se conferens, aperto alveari videt Vasculum elegansissimum effectum è candidissima cera prope alvearis fa- stigium, in quo reposita erat Eucharistia, circa illud choros apum circumsonantes, & excubias agentes. Acceptum igitur Episco- pus sacramentum maximocam hunc in templum reportavit: quo multi accedentes ab innumeris sunt morbis curati. Thos Bozius de signis Ecclesiae, Lib. 14. c. 3.*

In which Storie wee may note, besides the wonderfull knowledge and deuotion of the Bees, an incredible power and vertue also. For this God which they kept and compas- sed, is said to haue the gift of healing, which others, though of as good a making, we know doe want. The conclusion, which my Author necessarily inferreth hereupon, is better then all the rest. *Ex his necesse est dicamus in Eucharistia verum C. corpus esse.* But if thou wilt grant me that hereby is proued the incredible knowledge and skill of the Bees, for my part I will vrge thee no farther.

In the pleasures of their life, the Bees are so moderate, that perfect temperance seemeth to rest onely in them.

Also, in their owne Common-wealth, they are most iust, not the least wrong or iniurie is offered among them. But indeed I cannot much commend their Iustice towards stran- gers: for all that they can catch is their owne: vnlesse they may be excused in this respect, that the Bees of diuers huius are at deadly feud, or rather as Kingdomes, that are at defi- ance one with an other. v. c. 7. n. 25.

Their Chastitie is to be admired. *Integritas corporis vir- ginalis omnibus communis.*

51.
Temperance.

52.
Iustice.

53.
Chastitie.
Amb. Hex. L. 5.
c. 21.

August. de Tri-
nit. l.3. Et certe apes semina non coeundo concipiunt. Item, Omnipotens
creator apibus prolem sine concubitu dedit.

Idem de bono.
tonigali.
Georg.

Illiū adeo placuisse apibus mirabere morem,

V. 6. 4. n. 3. &c.

Quod non concubitu indulgent, &c. They ingender
not as other liuing creatures: onely they suffer their Drones
v. among them for a season, by whose Masculine virtue they
strangely conceiue and breed for the preseruation of their
sweet kinde. Which strange kinde of breeding the Philo-
sopher saith to be apparent vnto sense and reason. *Cum in*
genere piscium talis quadam sit generatio nonnullorum, ut sine
coitu generent; hoc idem in apibus etiam evenire videtur, quoad
sensus ratioq; apparens admoneat.

54.
Cleanlineſſe.

Hift. an. l.9. cap.

40.

Nat. hift. l.11.

c. 10.

Hift. an. l.9. c. 40

Var. l.3. c. 15.

For cleanlinesse and neatnesse, they may be a Mirror to the
finest Dames. *Mundissimum omnium hoc animal est.* For
neither will they suffer any flutterie within, if they may goe
abroad, *Amoluntur omnia ē medio, nullaq; inter opera spurci-
tia jacent;* neither can they endure any vnsauorinelle with-
out nigh vnto them. *Odere fædos odores: Nulla harum affi-
det in loco inquinato, aut eo qui male oleat.* And for their per-
sons (which are louely browne) though they be not long
about it, yet are they curious in trimming and smoothing
them from top to toe, like vnto sober Matrones, which loue
as well to goe neat as plaine: pied and garish colours belong
to the Wasp, which is good for nothing but to spend and
waste.

55.
The age of Bees.

Georg. 4.

Hift. l.5. c. 22.

Anent the age of Bees there are diuers opinions: some
thinke that they may liue fourre or fve yeares, yea some six
or seuen: *Neg, enim plus septima ducitur eas.*

Aristotle speaketh of a longer time. *Vita apum anni sex, non-
nulla etiam 7. possunt completere: quod si examen 9. aut dece
annos duraverit, prospere actū esse existimatur.* Which opinions
are grounded vpon this, that they see a stall sometimes con-
tinue so long, before the Bees die altogether. But this con-
tinuance is onely by succession: and so might they liue in
secula, if the rottennesse of their combes, the hardnesse of
their Honie, & the abundance of noisome stopping v: would
suffer them to abide the Hives. *Nam genus immortale manet.*

This noisome stopping is bee stings, often But
so called. The farina of flowers which if
it remains with the young bees, becomes

But the truth is, a Bee is but * a yeaeres Bird, with some ad-
uantage.

* Which is a long life in comparison of the Silk-wormes, which liue
but foure moneths; or of the Waspes, which liue but fve: or of the
Drones, which but six.

For the Bees of the former yeare, which vntill Ge-
mini in the next yeare doe looke so youthfully, that you can-
not discerne them from their full growne Nymphes, which
that spring they haue bred; doe from thenceforth change
with manifest difference: for the young Bees continue great,
full, smooch, browne, well-winged; the old waxe little, wi-
thered, rough, whitish, ragged-winged: and withall so fee-
ble, that when they come loaded home, if any thing stand in
their way, yea many times, though there be nothing, they
fall downe, and being loaded cannot rise againe: and then
either a little cold or wet in the day, or the nights dew kil-
leth them: you may daily finde, specially in *Cancer* and
Leo, some dead, some halfe-dead before the Hiues, and
some aliue and lustie, which yet can neuer rise againe.
Some of them will hold out so long, till their wings are
more then halfe worne: but by *Libra* you shall scarce see one
of them leaft.

The young Bees, as best able, beare the greatest burdens: for they not onely worke abroad, but also watch and ward
at home both early and late: when need is, they hazzard
their lives in defence of the rest, they beat away the Drones,
and fight with other Bees and Waspes, and assault with
their speeres whatsoeuer else offendeth them, they carrie
their dead forth to be buried, and performe all other offices.
But the labour of the old ones is onely in gathering, which
they will neuer give ouer, while their wings can beare them:
and then when they cease to worke, they will cease also to
eat: such enemies are they to idlenesse. And therefore
generally they die in their delightfull labour, either in the
field or comming home: *Atque animas sub fasce dedere.*
Sometimes as well in Summer as Winter v. the Bees take
pleasure to play abroad before the Hiue, specially those that
are in good plight, flying in and out, and about, so thicke,

56.
The difference
betweene the
young Bees and
old.

May

June
July

Sep^r

57.
The office of the
young Bees.

58.
And of the old.

Virg.
V.c.3.n.59. &
62.

59.
Bees wont est-
soones to play.

Nat. hist. l. 11.
c. 20.

60.
They are soone
killed with cold.

61.
How to reuine
them.

62.
The Bees excel-
legties.

63.
Bees a chief ex-
emplar of the di-
vine power and
wisedome.

Du Bartas.
Fift day.

and so earnestly, as if they were swarming or fighting: when indeed it is onely to solace themselues: and this chiefly in warme weather, after they haue beene long kept in. *Exercitationem interdum solennem habent: spatiataq; in aperto & in altum data, gyris volatueditis, tum domum redunt.*

The Bee is by nature very tender, soone chilled and killed with cold, which the Dorre, the Waspe, yea the Moth, the Gnat, and other little flies can endure, and most of all then, when by reason of long restraint, their bellies are ouer full. The first that faileth in them, when the cold beginneth to preuaile, is their wings: so that they cannot rise to their Hues to helpe themselues by the heat of their fellowes. How to recouer them, yea when they are quite dead, See Cap. 7. n. 63.

The Bee therefore excelling in many qualities, it is fitly said in the Prouerbe,

As	Profitable	as a Bee.
	Laborious	
	Loyal	
	Swift	
	Nimble	
	Quicke of sent	
	Bold	
	Cunning	
	Chaste	
	Neat	
	Browne	
	Chillie	

These wonderfull parts and properties of this little creature, what are they but so many evident proofes of the infinite power and wisedome of the Creator?

For, if old times admire Calicrates
For Iuorie Emmets; and Mermecides
For framing of a rigged ship so small,
That with hir wings a Bee can hide it all;
Admire we thenth' All-Wise Omnipotence,
Whisch doth within so narrow space dispence

23
tis of y. māke to the queene Bee, ne māke saye nothing at all nor of thē
tēne nor manē of her breeding, nor whēre she producē bly Royal fōmall Bees, or Royall
dronē, or ordinary Bees, or nymphas, or other some.
and of their Queenē.

So stiffe a sting, so stout and valiant hare,
So lond a voyce, so prudent Wit and Art.
Their well rulēd State my soule so much admires,
That, durst I loose the raines of my desires,
I gladly could digresse from my designe,
To sing a while their sacred discipline.

C. 2.

Likewiſt there is very little
sayd of thōſe Bees w^t tuſts to
ſtarts Ducces: of their ſex; or
Breding, or offiſe, or number
in every ſtart & ſwarms



CHAP. II.

Of the Bee-Garden, and Seats for the Hiues.

HOr your Bee-garden, first choose ſome plot nigh your home, that the Bees may be in ſight and hearing; because of ſwarming, fighting, or other ſudaine hap, wherein they may neede your preſent helpe. While the ſtalls are few, your Garden of Hearbs and Flowers will ſerue. *Hortis coronamen-
tisq; maxime alvearia & apes conueniunt, res praeipui quaſtus
comperdiq; cum favit.* But when they are growne to a ſufficient number, they require a ſquare greene plot fitted for the purpose. v.n.8.

1.
Of five things
requisite in a
Bee-garden, the
firſt is that it be
nigh at hand.

Nat. hist. li. 21.
c. 12.

2. See it bee ſafe, and ſurely fenced, not onely from all Cattell, (which if they breake in, may quickly ſpoile both the Bees and themſelues) and ſpecially from Swine (which by rubbing againſt the Hiues, and tearing the hacles in a wantonnelſe, are moſt apt to ouerthow the ſtalls;) but alſo from the violence of the winds: that when the Bees come laden and wearie home, they may ſettle quietly. v.n.5.

2.
That it be ſafely
fenced from cat-
tell and winds.

3.
The North and
East fences ſhould
be high.

The North fence of your Garden ſhould bee close and high, that the cold wind of that coast, (which blowing againſt the Bees comming home wearie, would throw downe and

and kill many) may bee altogether kept from them. And therefore, if it may be, set your Bees on the South side of your house.

The East-fence also would bee good and high to keepe from the Bees as well the sunne, as the wind. For the sunne rising doth oftentimes till them forth, when the ayre is colder then they can endure; and the East-wind being cold & sharp is very vnkinde for Bees, specially in the Spring.

4.
The South and West fence must be also good, but not so high as to hide the Sunne from the Hives.
V. c. 3. n. 19.

V. c. 1. n. 43.

5.
In rough winds the Bees need a skreene.

6.
That it be sweet.

But in no wise let the place be shadowed from the South-sunne: for that doth not onely dry the Hives and relieue the Bees in the Winter and Spring, but also causeth them to swarne in Symmer, if it be not extreme hot and drie v.

Nor yet from the Sunne-setting: because in calme and pleasant weather the Bees will be in the field after the Sunne is downe, euen as long as they can there see: and if when they returne, they finde it darke at home, many of them, their sight being but dim, v. fall short or wide: which flying and running to and fro till they be wearie, at length yeld to the cold dew.

Otherwise let the fences be as good against the South and West-winds also, as may be: for although they be not so cold and bitter as the other; yet are they no lesse violent, and more frequent: so that they also doe much harme, specially in the Spring. And therefore if at that time of the yeare, in rough and boistrous winds, you finde that the Garden-fences doe not sufficiently guard and defend them; then is it good to set vp wixed or lined hurdles, or some other skreene betweene them and the weather. For though they can shift abroad in the strongest winds, as a ship that hath sea-roome; yet are they easily ouerthrowne at the Hiue, as a shippe is soone wrecked at the Hauen.

A house or wall is fittest for the North fence: and a Quick-set-hedge for any of the other three: it may serue also for the first, specially if it be thicke.

3. That the place be sweet, not annoyed with any stinking sauour. I haue knowne a stall in the Spring, being sufficiently prouided of Honie, and hauing bred young, to forsake all, because of Poultry that roosted in a tree ouer them.

Odere

*Odore fædos odores, proculq; fugiunt: And yet the smell of
vrine doth not offend them: nay, they will bee very busie
where it is shed. It is thought they vse it for Physicke. Reme-
diu[m] contra alvi concitacionem est urina heminum vel boum.*

Nat. hist. li. 11.
c. 18.
Nat. hist. li. 21.
c. 12.

4 That it be neither verie cold in Winter, nor very hot in Summer. *Locus aestate non fervidus, hyemo tepidus, v:* A bare flower is naught in both seasons: because in Winter it is ouer cold, and by that meanes quickly chilleth the Bees that light vpon it; and in Summer it causeth them to lie forth through excessiue heat, v. A grasse ground therefore is best at all times: but let it be kept notte in Summer, and not wet in Winter: for long grasse and weeds about the Hiuue, doe but harbour the Bees enemies, v. and hinder both their passage in and out, and their rising againe when they fall short: and water if it stand, as it will bee offensiu[e] to your selfe, so is it dangerous to your Bees for chilling and drowning them. And as the parts about the huues are to be kept notte & bare, so are other places also, where the swarmes doe vse to play and pitch, whether within or without the Garden, to bee freed likewise from long grasse and weedes, much more from Beanes, Pease, Hempe, and such high things: for the young weake Nymphs falling in those shadie places, except the weather be warme and drie, are in danger to be chilled before they can rise againe. For which cause the swarmes doe vsually refuse to stay and settle about such places: and then if windie or cloudie weather suffer them not to goe further, they must either goe home, or light vpon some other Hues: where, without your present skill and diligence, they are like to be all lost.

5 That it be conueniently beset with trees and bushes fit to receiue the swarmes, as Plum-trees, Cherry trees, Apple-trees, Filberds, Hazels, Thornes, &c. Which they will the more delight to light vpon, if, conuenient boughes hanging out alone from the bodies, the twigs below standing in their way be pruned, and the weeds and grasse vnderneath be cut away close to the ground. Although, if they be willing to stay, they will not refuse a dead hedge, a Lauender Border, or the like, or sometime the bare ground. For want of trees,

7.
Neither very
cold in Winter,
nor ouer hot in
Summer.

Hist. I 9 c. 40.
P. 17 in c. 3. n.
36.

V. c. 5. n. 19.
8.
A grasse ground
is best, but kept
notte and drye.

V. c. 7. n. 3.

9.
5. Beset with
trees and bushes.

some haue stucke vp greene boughes, and the Bees haue lighted vpon them.

10.
Two sorts of
seats.

11.
The benches not
so good as single
stooles.

V.c. 7.m. 2.

12.
Swarmes may be
set on benches.

13.
Wooden stooles
better then they
of stone.

14.
The size of
stooles.

15.
which way the
stooles should be
set.

THe place being thus fittid, the seats are to be prouided: which, whether they be stooles or benches, must be set a little sheluing, that the raine may neither runne into the hiue, nor stay at the doore.

To set many stals vpon a bench (as many vse to doe) is not good: for that in Summer it may cause the Bees to fight; as hauing easie accessse on foot to each other, and standing so neere, that they shall sometime misteake the next Hiue for their owne: and in Winter the bench will bee alwaies wet, which looseth the cloome, rotteth the bottome of the Hiue, and offendeth the Bees: and the Mouse v. at all times hath free passage from one to an other, without feare.

The single stooles therefore are best. And yet it is not amisse to set most of your swarmes vpon benches, about the old stalls: from whence remoue them to the stooles, when the stalls are taken: and then set vp the benches till an other yeare. Yet I preferre single stooles set two foot apart, though they bee laid flat on the ground: but it is better to reare them with foure legges, though little and short. If they be twelue or thirteene inches, three or foure inches may bee forced into the ground for their surer standing.

The best stooles are of wood: those of stone are too hot in hot weather, and (which is worse) too cold in cold.

For their size, they should not be aboue halfe an inch or an inch without the Hiue: saue onely before, where there needeth the space of three or foure inches, that the Bees may haue roome enough to light vpon: specially then, when the sight of a rainy cloud sendeth them thronging home. Which fore-part from one side to the other, is to be cut sheluing that it may the better auoid the raine. And therefore if the Hiue be fifteene inches ouer, the stoole should not be aboue sixteene or seuentee inches one way, and nineeteene or twentie at the most the other way.

These stooles would be set toward the South, or rather a point or two into the West: that the Hiue may somewhat breake.

break the East-winde from the doore, v. and that the doore *v. nos. 3.*
may be lightened by the Sunne-setting, when they returne
late and loaded from field, v. and therefore it is to be wished *v. nos. 4.*
that the Garden-fences did stand accordingly.

They should stand in straight rankes or rewes from East to
West, ffeue foot one from another (measuring from doore to
doore) and from North to South, six foot one before an
other.

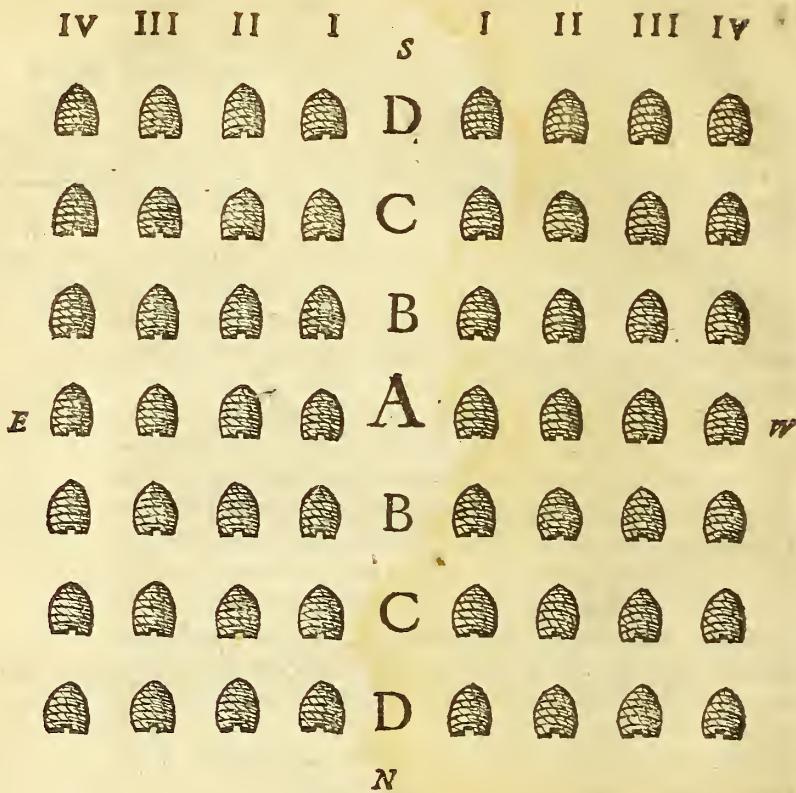
Likewise let them stand as fatre from three of the fences,
as they doe one from an other. And so a plot of fiftie foot
square, will receiue seuen rankes of nine stooles a peece, with
the space of eight foot before them: which if it were bigger,
were so much the better.

For want of roome or stooles, or wit, many doe set their
stalls neerer together. But the greater distance is much bet-
ter: not onely that you may haue roome enough to goe
round about euery one, to see and mend what is amisse; but
also that the Bees, when they come home in haste, specially
when a swarne goeth backe againe, may be sure to flie into
their owne Hiue. For if they stand neere together, at such
time many will take the next Hiue for their owne, and then
they fall together by the eares; v. and the Nymphs, when
they go first abroad, wil by that occasion the sooner mistake:
which if they doe, they dye.

v. c. 5. n. 79.
The manner of placing the stooles in your Garden, with
the distance of the rankes, I haue here expressed.

16.
How neare to
each other.

17.
How neare to the
fences.



This Climactericall number of nine times seuen, is a competent or rather complete store for any one Garden, though large and alone: which being well ordered, will yeeld the Bee-master the better part of a liberal maintenance: if any beso happy to attaine vnto it. So that I see no euill at all in this Number: although the sixtie three yeare of mans age, being likewise called *Climactericall*, (because it ariseth of nine Septenaries, as so many Climacters or Ladder-rounds) be counted of some, and those no small fooles too, a parles and ominous time: more dangerous for death, then all the other

other yeares of their life *. For which conceipt if you see no reason ; thinke it is grounded vpon good obseruations : for this is certaine, that a ladder of nine rounds hath beene fatall vnto many.

* *Ptolomæus obliquè eos notat, qui climactericos annos faciunt ex numero-rum sola obseruatione, ut enneadicos & hebdomaticos. Vnde multis molestiæ sensibus superstitionis super anno sexagesimo tertio, quenam peius angelus tigris est: formidans sed peccat in his vulgus errore rentalis, qui Philosophi esse volunt, quis excusaverit?* Pic. Miran. Lib. 6.c. 19.

Answerable vnto this climactericall squadron it is meet you haue at hand a Register, containing the feuerall ages and yearlye increases of all your stalls. Whereby you may be directed euery yeaer, which are to be taken and which to bee kept for store: v: which is the chiefe point of a thriuing Beemaster. This Register may bee a *Synopsis* or Table drawne vpon a sheet, or halfe-sheet of Paper, diuided into sixtie three squares, or as many as be needfull for the stalls in your Garden: hauing first the foure Coasts, *E. S. W.* and *N.* noted in the out-sides: secondly, the middle rew of squares from *S* to *N.* distinguished by Letters, the first square being marke aboue with *D*, the second with *C*, and the third with *B*, which are Southerne: The fourth (being the chiefe and middle-most, vnto which all the squares in the Table haue reference) with *A*, the fist with *B*, the sixth with *C*, the sequenth with *D*, which last three are Northerne: and thirdly, the first rew of squares next the Letters on both the *E* and *W* side, noted in the top or South-part with one *I*, the second on both sides with *II*, the third with *III*, and the fourth with *IV*.

The Table thus drawne, when you haue set a swarne vp on any stoole in the garden, marke in what letters ranke it is, what number from the Letter, and whether Eastward or Westward: and in the square answering thereto begin his Register, setting downe first the two last figures of the yeaer of the Lord, then for a prime swarne, a double circle, for a castling halfe a double circle, then the day of the moneth in which he was swarmed, writing *M* for May, *I* for June, *J* for July. The next line begin with the next yeaer: if he did

^{19.}
The Bees Register.

V. c. 10. p. 1. n. 3

swarme, set down a crossed circle, and the day of the moneth: if he swarmed againe, set downe in the same line a halse circle, with a downe-right stroke, and the day of the moneth: if he did not swarme, but were full to the doore, set downe a circle with a full point in it: if he did also lye out, set downe a circle with a blotted circle in it: if hee did neither lie out nor were full, set downe a void circle.



And then doe likewise all the yeares that this stall endureth. When the Table waxeth full; after the vindemie make a new: taking out of the old the Register of those that liue. By this meanes you may certainly know the age, and yearely increasess of any stall in your Garden: and so guesse whether he be fitter to kill or to keepe. *V. c. 10. p. 1. n. 3.*

20.
The stooles height

V. 65. n. 19.

n. 12.

21.
How to be footed.

Also the stooles shold not stand aboue two foot from ground, because of the wind: nor vnder one foot for the dampnese of the ground in winter, which would make the Hiues moist and mustie; and for the heat of the ground in Summer, which in hot and dry weather would make the Bees lye out, and so hinder both their worke and swarming. *v.*

The best heighth is betweene eighteene and twentie inches. Yet if you haue many, it is conuenient that the more Northward rankes shold stand higher, and the more Southward lower, descending by degrees from two foot to one: as if there be two rewes of stooles, let the first stand two foot from ground, the next eighteene inches, & the beches or swarmeres stooles one foot or leise. *v.* If there be three rankes beside the beches, let the second be twentie inches, and the third sixteene, &c.

This vnequall heighth of rankes may as conueniently be effected, though the stooles be all equall, by the vnequall leuelling of the ground: which in a great Bee-fold is best.

The stone stooles must be footed as they may: the fashion of each place where they are vsed will direct you. But the plankes or wooden stooles are either to haue foure feet made of the heart of Oake, or of some other lasting Wood; or

orted to be fastned to one foot with two wooden pins: which foot let be made of sound timber five or six inches ouer; and of that length, that it may be set betweene fifteene and eighteene inches in the ground.



CHAP. III.

Of the Hives, and the Dressing of them.



N some countries they vse strawne Hives bound with briar: in some wicker Hives made of Privet, Withy, or Hazel, dawbed vsually with Cow-cloome tempered with grauelly dust, or sand, or ashes.

The strawne Hives when they are olde and loded, do vsually sinke on the one side, (specially if they take wet) and so break the combes and let out the honny: for which cause, first see that they be hard wrought, and then spleet them strong with a Cop, v. fitted to the top of the Hive.

The Wicker Hives will still beat fault, and lie open, (if they be not often repaired) vnto Waspes, Robbers, & Mise. Any of these, if shee finde but a little chap, will dig her way in: and the Mouse (vnlesse the twigs be close wrought) though she finde none.

Both these Hives, if they be not well couered, are subiect to wet: which maketh them rausty, and, if it be much, rotteth the combes, and destroyeth the Bees. But the heat in Summer, the cold in Winter, and the raine at all times doth soonest pierc the Wicker Hives: for which cause it is good to double-dawbe them.

All things considered, the strawne Hives are better, specially for small swarmes.

Two sorts of Hives.

2. Strawne Hives with their inconueniencies and remedies.

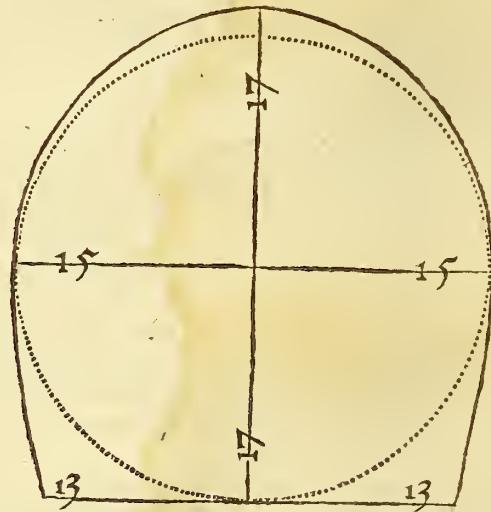
V. n. II.

3. Wicker-Hives with their inconueniencies and remedies.

4. Strawne Hives best.

The

The Bees do best defend themselves from cold, when they hang round together in manner of a Sphære or Globe (which the Philosophers account the most perfect figure) and therefore the nearer the Hine commeth to the fashion thereof, the warmer and safer be the Bees. But of necessitie the bottome must be broad, for the vpright and sure standing of the Hine, and for the better taking out of the combs: and the top must rise some two or three inches higher then the iust forme of a Globe, to stay the hackle, and to shunne the raine: which yet, where the Hines are couered with panns, is not necessary. Otherwise let your Hines vary no more from this round figure, then needs must: as where it is within from the top to the skirts seveteene inches, in the middle or widest place through the center fiseene inches, and at the skirts thirteene, after this forme.



This forme with his dimensions wil conteine three pecks: and the abating of one inch in each dimension, abateth a gawne in the content.

The best that I haue seene are wrought by Thomas May of Sunning, about one mile from Redding.

Hines

Hiues are to be made of any size betweene a bushell and halfe a bushell : that any swarne, of what quantity or time soeuer, may be fitly hiued. *v.* Lette then halfe a bushell will not containe a competent stall ; and more then a bushell is found too bigge for any company to continue, and thriue together.

The midling size of three pecks, or within a pottle, vnder or ouer, as fitly conteining the naturall quantity of a good stall, is most profitable.

Haue alwaies Hiues enough of all sorts (but most of the midling size) in store, lest they be to seeke when you should vse them.

The best time for making them, whether they be Strawne or Wicker, is in the three still moneths of Winter, *Sagittar.* *Capr.* and *Aquar.* *v.* for then the * straw, briers, and twigs are best in season : and then is it best to prouide them, because then they are best cheape.

* The best straw is most yellow without blacke spots, which is strong and tough.

Our Hiue being ready is thus to be dressed : First, take away all those staring strawes, twigs, and other offensive jiggles that are fast in the Hiue, making the in-side as smooth as may be : for these obstacles being many, if they cause not the Bees to forsake the Hiue, yet will they much trouble and hinder them : you may heare them (specially in the night) scraping and gnawing three or foure daies after they be hiued, yea sometime a weeke together, as though there were mise in the Hiue : and in strawne Hiues a long tiime after.

If you need but few Hiues you may prune them cleane with your knife : if you must vse many, then, hauing wet the skirts with a cloth, singe or sweale the in-side : but first and last rub it well with a Rubber, which is a peece of rough grind-stone or sand-stone, as great as your hand can hold.

2. The Hiue being pruned, put Spleetes in it, ^ three or foure, as the largenesse of the Hiue shall require : the vpper ends whereof set together at the top of the Hiue, and the nether ends fasten below in equall distance, about a handfull

6. The size of Hiues

V. s. 5. n. 43.

7. When Hiues are to be made and prouided.

V. n. 54.

8. How Hiues are to be dressed before they receive the swarmes.

9. The pruning of Hiues.

10. The spraying or splattering of them

aboue the skirt. In a wicker-Hue let the vpper ends rest a-
gainst the middle of the staffe, & the nether ends against the
parts of it betweene the Wickers ; and in a strawne Hue, set
the vpper ends together in a Cop , and the nether ends a-
gainst the briars or threads, between the third & fourth roule.

11.
*The making of
the Cop, and of
the Spleets.*

The Coppe is a round piece of wood an inch or two
thicke, whose lower superficies is flat, with a hole in the mid-
dle halfe an inch deepe, for the Spleets to rest in ; and the v-
pper is conuex , turned or hewed fit to the concavitie of the
top of the Hue.

And for the Spleets, take a staight hazel or willow-sticke,
quarter it if it be bigge enough , else slit it : then shawe and
smooth the clefts, and having brought them to a conuenient
strength & length, cut the lower ends forked, to stay against
the Hues sides, and the vpper ends somewhat picked, and of
that bignesse that they may fitly ioyne in the Cop or middle
of the staffe , with their backs leaning ^c hard and fast one a-
gainst another.

^a If the Hue conteine aboue three peckes , it may well receiue fourre
Spleets : otherwaise three will suffice.

^b Steife enough to keepe vp the Strawne Hues from sinking, specially
when they are turned. v. 5. n. 22. & 23.

^c If you put fourre Spleets in a Hue, then cur their backs, where they
must leane one against another , to square angles , such as be fourre in a
circle : if but three, cut them to obtuse angles, such as are three in a circle :
(you may readily try them, before you put them in, by Moulds made just
to those formes) and so will they stand close and firme together. The
first two of three, and the first three of fourre are loose : it is the last that
makes all fast.

And this is a handsome, easie, and sure way of spleeting :
it is also good for drawing the Combes without breaking,
and for keeping the Hue from sinking and from tearing at
the top. Besides which there are diuers sorts of spleeting,
needleſet to be rehearsed : for every Countrey hath his fa-
ſhion.

12.
*The seasoning of
them.*

3 Lastly , in swarming time season the Hues that you
meane to vſe, rubbing them with ſweet herbes ſuch as the
Bees loue, as Tyme, Sauourie, Marioram , Baulme, Fenell ,
Hylſop, Mallowes, Beane-tops, &c. And when the ſwarme
is

is settled, take the Hiue that you thinke fit for it in bignesse, v. and with a branch of Hazell, Oake, Willow, or any of the foresaid herbs, but chiefly with a sprig of that tree whereon the swarne lighted, wipe the Hiue cleane; and then dipping it into Meth, or faire water mixed with a little hony, or with milke and salt, or, for a need, with salt onely, besprinkle the same.

But if the Hiue haue beene vsed before, after you haue pared away the wax as cleane as may be, if you thinke the former dressing will not make it sweet enough; then let a hogge eat two or three handfuls of mault, or pease, or other corne in the Hiue: meane while doe you so turne the Hiue, that the some or froth, which the hogge maketh in eating, may goe all about the Hiue. And then wipe the Hiue lightlie with a linnen cloth, and so will the Bees like this Hiue better than a new. But besprinkle it also, when you doe vse it, as is shewed before. And so serue a new Hiue when the Bees are so froward, that they will not otherwise abide.

And thus are the Hiues to be prepared and Dressed, before they receiue the Bees. Now will I shew you how they are afterward to be fitted and furnished.

1. **F**irst, let them be alwaies well couered, that they may be safe in Summer from heat, lest, the wax melting, the Combes fall downe; v. in Winter from cold, lest it kill the Bees; v. and at all times from raine, lest it corrupt first the Hiue, afterward the Combes, and at last the Bees also. v.

In some places (where the stalls are not many) they vse earthen couers: but thesedoe not defend the lower part, and in Summer are too hot.

The best couer for Hiues is a thicke hackle: *Alvearia stramento operiri utilissimum*. Which is thus to be made. Take foure or fve handfuls of * Wheat or Rie leasid out of the sheafe: which being bound vp severally, beat out the corne; and then casting away their bands, draw out the eares of each handful longer on the one side than on the other: and putting the long sides together (so to make the Head in forme of a Pyramis or Suger-loafe, for shooting the raine)

^{13.}
The seasoning of
an old Hiue.

^{14.}
How Hives are
to be ordered
when the Bees
are in them.

^{15.}
The Hives al-
ways well hack-
led.

V. 6. 7. n. 53.
V. 6. 7. n. 54.
V. c. 7. n. 58.
Nat. hist. li. 21.
c. 14.

^{16.}
How to make a
hackle.

* *In want of
such straw,
Wood-benet, or
Sedge, or Rushes
may serue.*

17.

The Cap of two
sorts.

18.

The wreathed
Cap.

19.

The platted Cap.

binde them all in one vnder the eares, as hard as you can.

The Head is to be couered or bound fast with a Cap: of which there be two good fashions, the one wreathed, the other platted.

The wreathed Cap is thus made; having bound the bundles all fast together with a thong, cord, or other strong string, lease out of the sheafe almost a handfull of the strongest straw, and lay it in soake about a quarter of an houre. Being thus prepared, take out of that wet bundle a litche of 40. or 50. reedes or strawes; and laying halfe of them one way, and halfe the other, that the band may be of equall bignesse, take them vp together; and then mingling one end of the litche with the middle reeds of the Head, and twisting them fast together in your hand, let the band harle or double in the very top of the Head: and so begin to binde the Head round, working downeward, and still twisting the band as you goe. When that litche is well-nigh wrought vp, take out of the wet bundle so many more reedes prepared as before: and when you haue mingled one end thereof with the end of the first litche, holding them in your hand twist them fast together: and so continue your worke, alwaies binding as hard as you can, & bearing vp every roule close to his fellow. When you are come down to the string, loose it, and binde the last or lowest roule in the place therof, making fast the end, by forcing it vp between the Head and the Cap with a forked sticke and a mallet.

The platted Cap is wrought contrary to the wreathed: for whereas that is begun in the crown, & wrought downward toward the right hand, and is made fast in the necke; this is begun at the necke, and wrought vpward toward the left hand, and is made fast in the crowne, after this manner.

First take a litch of strong reedes, and hauing wetted and wound it a little, put it about the necke of the hackle, and knitting the ends in a half knot, girt the hackle hard with it: (your assistant holding one end, while you pull the other) then to make this collar fast, wrap each end about it, forcing them betweene the collar and the head with the forke and mallet: Otherwise you may make a strong collar of a small

With.

With. The collar thus fitted to the necke, set the hackle betwene your legs, as you sit or stand, with the knot outward: and then, to begin, take vp a litche of the eares (about the bignesse of the top of your finger) next vnto the fore-said left end of the collar, and laying this end betwene it and the head, turne the top of the end downward, and so leaue it: then take the next litch, and laying the first betwene it and the head, turne the first downward, and so leaue it: then likewise take a third litche, and laying the second betwene it and the head, turne the second downward, and so leaue it: likewise the fourth, and so forth, working thus round, till you come to the crowne, and plattin still the litches hard, and close to the head. But when you come to the other end of the Collar, take that in for a litche. If the litches be too short for the worke, plucke them vp higher about the necke as you goe. When you haue wrought vp to the Crowne, knitting the foure last or top-litches in a true-loues-knot, make all fast.

The hackle thus made offoure or fife handfulls will conteine in compasse about the necke, close vnder the Cap, betwene sixteen and twenty inches: sixteene will serue for the smaller Hiues, and twenty for the greatest, although they be fife foot about.

For the length of the hackles, each one is to be fitted to his Hiue, so that the skirts thereof may reach to the stoole, or within halfe an inch of it round about; saue onely before, where it must be pared somewhat shorter, that the Bees passage be not hindered.

And then with a small pliant Garth or Belt of Bethwyn, Bramble, Brier, or the like, gird the hackle close to the Hiue*, lest the wind disorder it. If there be any crooke or bout in the Belt, set that before, that the hackle, bearing in that place farther out, may shoo the water from the doore: otherwise, for that purpose, set the Belt somewhat higher before, then behinde.

*In the Winter, place the Belt below the middle or biggest part of the Hiue, to keepe it warme in extremity of cold. In Summer aboue, that the nether part of the hackle hanging out from the Hiue, the Hiue may be the cooler: and then because the Belt will be apt to rise, it would be held

20.
The bignesse of
the hackle.

21.
The length of it.

22.
The belt or
garth.

downe to the place with two forked sticke, the fork resting vpon the Belt, and the other end vnder the Cap.

23.
The huckle now
and then to be
taken off.

The Hackle thus fitted and placed, is now and then to be remoued, not onely to meet with Mise, Moths, Spiders, Ere-wigs, &c. which harbour vnder it, and to see what breaches the Mouse and Tit-mouse haue made; but also to ayre the moist Hiue: and this in a warme and windy day after much wet.

24.
The Hiues al-
ways close clo-
med.

Nat. hist. li. 21.
cap. 14.

Next keepe the Hiues alwaies close for defence of the Bees against their enemies. The best cloome for that purpose is made of Neats dung: *circumlini alveos simo bubulo utilissimum*: but to harden it, temper it with Lime or Ashes, with sand or grauell, which are also good against the gnawing of Mise. With this cloome close vp the skirts & brackes of your Hiues: that there be no way into them, but onely by the doores.

25.
Then seldom to
be mowed.

K. n. 41. 49.
53. & 67. & c. 8
& 9.

26.
How a Hiue lif-
ted vp is to be
set downe again.

27.
The Hiue-doore.

28.
The Gate or
Summer-doore

And being thus safely shut, moue them not without vrgent occasion; v. for often lifting vp the Hiue, and letting in the open aire doth discourage the stall.

But whensoever you are occasioned so to doe (the Bees being stirring) lest any be crushed betweene the skirts and the stoole in setting it downe againe, teele vp one side with a little tile-shard: which, when the Bees are quiet, take away, and see the Hiue close cloomed againe.

The Bees entrance, as anon in this Chapter is shewed, must be sometime larger, sometime lesse, sometime nothing at all. And therefore euery Bee-Hiue must haue his Gate or Summer-doore, a Winter-doore or wicker, a Barre or shutting of the wicker.

The Gate or Summer-doore must be made of that size, that the Bees in Summer, when their number is greatest, may haue aire enough, with free egresse and regresse, not letting one another. The space of foure square inches is sufficient for any stall.

This Summer-doore is made thus: First cut away the lowest roule the space of fие inches: and, with the Briar or Thred which bound that part, make fast both ends. Then fill vp againe the two extreme halfe-inches of the space, with two Doore-posts.

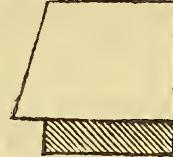
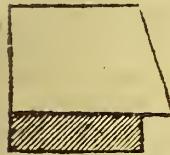
The

The Doore-posts are two spleets halfe an inch broad, and fve or six inches long, whereof the lowest inch is twice so thicke as the other, with a shoudering on the in-side. These Posts forced vp through the middle of the roules in their place, to the shoudering, as they serue to size out the Summer-doore to his due space of foure square inches; so are they fit to receiue the Winter-doore, v: when it shall be ioyned vnto them.

If the Hiue be with the least, you may set vp the Posts without cutting the roule.

In a Wicker-hiue the Summer-doore is made more easily.

Sometime, namely when a Hiue is reared, moueable posts are requisite: which may serue also at other times. A moueable Post is an inch-square peece of wood, with a shoudering aboue to rest against the Hiue: and an other in the in-side of the doore to fit the wicket: the forme is this.



The Winter-doore or Wicket is made of a peece of wood, an inch and a quarter thicke, almost an inch high, and fve inches long. At each end whereof cut away halfe an inch all, saue before, where that halfe inch in length must be least a quarter thicke, with his full heighth to fit the doore-posts: then in the middle of the neather side, cut, through the thicknesse, a hollownesse or passage, almost halfe an inch high, and three inches long: and then there will remaine at each end of the hollownesse halfe an inch vncut, besides the two extreme halfe inches least a quarter thicke, and fitted to the Posts.

The fashion of which wicket you may see in this figure.

²⁹
Of the doore-
posts, and the
use of them.

V. n. 30.

^{30.}
The Winter-
doore, or Wicket.



31.
The use of it

The vse of the Winter-doore is to straighten the passage when there needeth not so much roome, that the Bees may the better keepe out the Robbers, that the Cold may haue the lesse force, and that the Mice may not enter, which in winter are wont to make much spoile. v. c. 7. n. 3.

32.
The Barre.

V. c. 7. n. 6.

The Barre or shutting is to be made foure square of some heauy matter, as namely of Lead (that neither the rough wind nor craftie Titmouse v. may remoue it) in *length, depth, and thicknesse fitting to the wicket: with some little hollownesse next the stoole, that may let in the aire, and not let out the Bees.

* The length may be three inches and an halfe, the thicknesse three quarters, the depth halfe an inch: and the length of the hollownesse two inches and an halfe, the depth halfe a quarter of an inch.

For want of Lead or other mettall, you may with a hammer and grind-stone fit a Tile-shard: but let that be somewhat broad, that it may lie the faster on the stoole.

33.
The vse of it.

With this Barre you may shut or halfe shut the Wicket, as you shall see cause; to defend the Bees in the more dangerous times from Frost, Snow, Titmise, and Robbers.

34.
The Settle.

For small stalls, the Gate, Wicket, and Barre, may be all of a lesse size.

It is also conuenient for each hue to haue his Settle before him: which may be a planke of the bredth of the stoole, and of that length that it may stand leaning from the ground to the fore-part of the stoole: that thereon the Bees may settle when they come wearie or thronging home, and so ascend to the doore; and that there they may sunne and refresh themselves being chilly and wearie. Otherwise you may make a narrow planke or boord to serue, fitting the length of it to the bredth of the stooles, and then the one edge leaning to the fore-part of the stoole, let the other bee borne

borne vp with two forked stakes set fast in the ground, or by some other props.

Bee-hives being thus fitted with all necessaries, are afterward at diuers times of the yeare to be diversly ordered.

The *Melissæan* yeare is most fitly measured by the Astronomicall monthes (which begin with the Sunnes entrance into the severall signes of the Zodiack, and are therefore called by their names) because as the Sunne, entring into the twelue signes, and so beginning these twelue moneths, doth notoriously alter his course, making the daies longer or shorter, the aire warmer or colder, and the earth more fruitfull or barren, making also both the *Equinoctia* and *Solsticia*, in which the foure quarters of the yeare, Spring, Summer, Autumne and Winter take their beginnings ; so the most notable alterations about Bees, in things either to be obserued in them, or to be done for them, doe likewise fall out in the beginnings of these moneths.

But the foure *Quarters* the Bees begin one moneth sooner then the *Astronomers*. For their Spring or first quarter beginneth with *Pisces*, when the Sunne beginneth by his quickning heat to reviue the flowers, which all the dead of Winter lay buried in the ground; and the Bees hauing tasted thereof beginne to breed, v. and to increase their companies for the fruits of ensuing Summer, which from the former Summer hitherto haue daily decreased: the other Spring-moneths are *Aries* and *Taurus*, v. n. 63. &c.

Their Summer likewise containeth *Gemini*, *Cancer*, and *Leo*, most rich and plentifull in flowers and dewes, v: where-with the multiplied Bees doe now store their Cells against the penurie of Winter. v. n. 37.

Their Autumne or Haruest, hath *Virgo*, *Libra*, and *Scorpio*: in which the Bee-masters v: and the Master-Bees v: doe reape the ripe fruits of many Bees labours. v. n. 44.

And their Winter consisteth of the three still moneths: v. in which the Bees liue altogether vpon their Summer-store, and get nothing. v. n. 58.

Heere note, that although Winter and Summer doe properly

35.
How to order the
Bee-hives
throughout the
yeare.

36.
The moneths and
quarters of the
Melissæan yeare

Feb:

V.C.4.2.12.

Mar: & April
May June & July

V.C.6.2.3.8. &c.

Aug: Sept & October
V.C.10.2.1.2.1.
V.C.7.2.25. &c
28.
V.N.59.

Psal. 74. 17.
Prov. 20. 4.
Ze. 14. 8.

perly betoken two of the 4. quarters of the yere; yet sometime they be taken, according to the common account, for two halfe parts or moities thereof: the one containing the warmer season, as from the end of *Aries* to the end of *Libra*, the other the colder, as from the end of *Libra* to the end of *Aries*.

* Namely, when they are mentioned together in a kind of opposition: *asc. 3 n. 7.* where you reade, neither very cold in Winter, nor very hot in Summer. *Locus aestate non servidus, hivem ripidus, &c.* Which two opposite parts the Poet doth fity distinguish and describe by the two times of sojourning and of pasturing Sheepe and Goats.

Georg. lib. 3.

Vixitq; fures & virgea letus

Tabula, nec tylæ claudis farilla Bruma:

At vero Zephyris quam latet vocantibus Aestas,

In falso utrumq; gregem & Pascua mittit.

Metam. lib. 6.

But they are more certainly notised by the comming of the Fieldfare, and of the Swallow: the one bringing cold Winter, the other warme Summer with her. Hir Sister *Philomela*, that shrowdes hir selfe in the woods, is wont a litle to preuent hir, obseruing more the iime of the ycare, then the disposition of the aire: For she is heard commonly the last weeke in *Aries*, though it bee then cold and winterly weather: whereas *Tr. gno* stayeth after that yntill she finde it warme abroad. If some foolish one or other chance to start out of hir *Dormitorie* sooner, the Proverbe then is veridie, One Swallow makes not a Summer.

37.
S V M M E R.

V. n. 28.

The Spring hauing replenished the Hives with plentie of Bees, the Summer is readie with his plentie of Honie to enterraine them. During which season the Hives must haue their largest entrance, lest the thronged multitudes be perstered for want of aire, or doe let one an other as they goe and come earnest in their worke, or bee stayed in swarming when they should passe at pleasure. Neither can the openesse of the Hives be hurtfull vnto them, seeing now there is no feare of enemies.

In GEMINI therefore set the doores v: wide open, without Barre or Wicket: and so let them stand all this quarter.

Gemini being past, if the weather be vsually coole, when there commeth a calme warme day, take off the huckles from those Hives that are likely to swarme: But if the weather be extreme hot and dry, then is it good to keepe on the huckles to coole the Hives, &c. v.c. 5. n. 21.

38.
May
*set the doores
wide open.*
V. n. 28.

39.
June
CANCER.
40.
*To make the Bees
swarne.*

At mid-Cancer double the stalls that lie out. v.c. 5. n. 22. 23.

When

When you would haue no more swarmes, as namely after the first blowing of Blackberries, v: which is commonly within a seuen night after Midsummer: set vp those Hives that are full with three Tile-shards, or other things of like thicknesse, and cloome vp the space betweene the hieue and the stoole: If yet they chance to swarne, as soone as they are hived, put them backe to the stocke, v. c. 5. n. 11.

Also reare the swarmes that being vnder-hiued doe lie forth, with bolsters of that thicknesse that may but let in the Bees.

In *Leo*, or presently after the last swarne, kill the Drones, of those stalls you meane to take, with a Drone pot cloomed to the doore. V. c. 4. n. 35.

And if you see any other so pestered with multitudes, that they are loath to meddle with them; you shall doe well to helpe them some warme afternoone, and then will they take the worke out of your hand, and spend the leſſe time about it.

To the plentifull Summer succeedeth wastfull Autumnne.

At *Virgo*, therefore, or a little before, (which is the most dangerous time for Bees, because of Wasps that then, if not sooner, learne the way into the Hives, but chiefly of robbing Bees, which then begin to spoile) v. To the Gates of the weaker stalls, (whether they be small swarmes, or stocks that haue cast twice and late) set vp the Winter-doores, and fasten them with good cloome, v: and see that the Hives bee close in all places. (Those that haue lien forth or otherwise be verie full, you may let alone and not straighten their entrance till the weather bee colder, for such are ſafe enough.) But firſt view your swarmes whether they ſit their Hives: those that haue not now wrought downe within a handfull of the stoole, if you meane to keepe them (to the end they may lye warme the Winter following, and be ready at the doores to keepe out robbers) cut off ſo much of the skirts as will ſerue the turne (the bigger the Hieue is, the more you may leſſen him) and ſo ſet him downe, cut a Summer-doore v: in the skirt, and put to the Winter-doore: Without ſuch help the cold will kill many, and weaken all, whereby they

41.
To keepe them
from swarming.
V. c. 5. n. 11.

42.
L E O.

43.
How and when
to kill the Drones.

44.
H A R V E S T

45.
V I R G O.

46.
To keepe the wea-
ker hives from
robbing.

V. c. 7. n. 28.

47.
Set vp the Win-
ter-doores.

V. n. 24.

V. n. 28.

Hist. l. 9. c. 40.

48.

And keepe them
shut til they offer
to go abroad.

V. n. 33.

49.

The reared stalls
now to be set
downe againe.

V. n. 41.

V. c. 1. n. 55.

V. c. 4. n. 25. &c.

V. n. 26.

50.

In Virgo try
whether the Bees
will live.

become vnlustie in all their doings : as the Philosopher well noted, *Si alveus justo amplior sit, desidiosiores reddantur.*

Morecouver, because the Waspes and robbing Bees will bee stealing betimes, before the true Bees be stirring ; it is good in the euening, when the Bees are all in, to barre vp the Wickets of those that are weake, that a Bee cannot passe : and not to open the same the next day till the weather be warme, and the Bees offer to come abroad, though it be not before nine, or ten, or eleuen a clock: and then you may either open it, or halfe-open it, according to the flight of your Bees, v.

The stalls which you reared in the end of *Cancer* for feare of swarming or want of roome, v: (now that the death of the old Bees v: and of the Drones v: hath made roome) are to be set downe againe, v: lest their swarming be hindred the next yeare: vnlesse they be swarmes that haue wrought downe to the stoole.

Also in this moneth, about the middle, those Hiues which you deeme to be weake because the Bees are gone vp from the doore, knocke with your hand, one after an other : they that at the first or second stroke doe make a great noise both aboue and beneath, continuing the same for a space, haue stoe of Bees, and are therefore in lesse danger: but those that make a little short noise, though they be heauy and haue Honie enough (such as are commonly those of three yeare old, & vpward, that haue cast twice or oftner that yeare, and did not by *Virgo* beate away their Drones) yet haue they but few Bees, and are therefore ill able to resist the violent multitude of Robbers : which, when they perceiue their weake[n]esse, will neuer leaue them, as long as there is a drop of Honie in the Hiue.

V. c. 7. n. 45.

If you see them once fighting, v. either presently take them, or make their entrance so narrow, that but one Bee may passe at once : and before *Libra* bee sure to take them. For though they escape this robbing-time through your care and diligence ; yet at the Spring they will surely yeld, or die of themselues, or flie away. Note yet, that those stalls which are very full, will make but a little noise when you knocke them, (but different from the other, as being quicke, smart, and

Jaine

Augt

Sept

and all ouer the Hiue) vntill toward the end of this moneth, when they be gone vp from the doore, and their number is somewhat diminished.

In the end of this moneth is the time to kill and drue Bees, v. c. 10. part. 1. n. 2. & 13. Some Bees faile after *Virgo*: and therefore it is good to make triall of them in *Libra* also, by posyng and knocking the Hiues; for as they that then make * a little noise will die for lacke of company; so they that are light will die for lacke of meat. And alwaies haue an eye to those that the Robbers doe eagerly haunt: which is a signe that they perceiue in them some defect or other: and therefore will not be answered without their errand.

* A little short noise aboue in the Hiue, specially when in the end some few single Bees endeouer by their earnest and continued sound to secme many, bewraith their paucity and decaying.

Such as by these meanes you finde vnlikely to liue, take or drue: those that you suspect, and yet are willing to keep; marke them, feed them in due time, and proue them againe in *Pisces* and *Aries*.

At *Libra*, or before if you see cause, set vp the Winter-doore of the best, and then diligently in the evenings shut all those in with the Barre, that haue leaft watching at the doore. For in the cold mornings, while the true Bees keepe in, because it is not fit time for them to gather in; the theeuers, both *Wasps* & Bees will be abroad, seeking where they may breake in and steale. But still let the weaker haue their Wickets halfe-shut.

This shutting & opening of the Wickets must be continued throughout *Scorpio* also; vniuersall abundance of cold raine do sooner chalten the *Wasps*. But for the poore stalls, it is best to keepe them halfe-shut all the day long, as in *Virgo* and *Libra*.

At *Scorpio* dress your Hiues for Winter. First lift vp the stalls (except those that be full of Bees, which will not need your helpe) and sweepe the stooles cleane: then setting them downe againe warily, v. that you hurt no Bees, cloome them close, and mend all brackes and faults about them: and where the hackles be worne, set new in their steads, that may keepe

51.
Now take the
Combes.

52.
LIBRA.

53.
Try them againe
in *Libra* also.

Sept.

54.
Now set vp the
wickets to the
best, and keep the
rest shut till the
Bees offir to goe
abroad.

Feb. & March
Sept.

55.
SCORPIO

56.
Continue the
shutting and o-
pening of the
wickets this mo-
neth also.

Oct.

57.
How to dress
the Hives for
Winter.

v. n. 26.

Aug. 14
Sep. -

Oct. 6 -

58.
WINTER.Novem
ber
Dec 2
Jan: 459.
SAGIT.
CAPRIC.
AQVAR.
three still mon-
neths.60.
How the Bees
spend their time
in them.

the Hives dry and warme. And now remember also to shut the wicketts of them all.

After Autumnne, the Sunne drawing neere the Winter Tropicke, with a short and low course aboue our Horizon, there follow three still moneths, *Sagittarius*, *Capricornus*, and *Aquarius*: in which as the plants lie still in the earth waiting the Sunnes retурne to reviue them; so the Bees lie still in their Hives, passing this fruitlesse time in sleepe and slumber. Yet so, that if there happen a milde and warme houre, they presently perceiuing it awake out of their swiuet, and hyethem out of doores with all alacrity: that they may take the fresh aire, recreate themselues, drinke, exercise their wings, carry out their dead and other noysomenesse, and lighten their little bellies, which are oft times so stuffed, when the weather suffreth them not to goe abroad, that they can hold no more: so loth are they to defile their nests. And hauing thus refreshed themselues, at their retурne, they take their repast, and then betake them againe to their rest. But many such daies, specially in time of scarcity, are dangerous, as causing them to spend much of their store, which in still frosts they would spare.

Dec

61.
The first sharpe
weather in Capr.
Shut the Bees in.
V. c. 7. n. 6.

The first soule and cold weather in *Capricorne* shut the Wicketts close, to sau the Bees from the Tit-mouse, v. and from the cold, as well within the Hiue as without. For as the frost and snow and cold winds, yea and the ordinary disposition of the aire doth chill many of them, whom the flatering sun-shine enticeth abroad; so the great frosts, striking through the doore, doe freeze the nethermost in the Hiue to death: so that by little and little many stalls in some winters haue beene thereby wholly destroyed: the which, by keeping them warme, might haue beene preserued. But when you shut them in, be sure the Hives be alwaies close and sure: for the Bees when they awake will striue by all meanes to come forth, though they never finde the way in againe. Yet when there happeneth any pleasant day (namely when the sunne shineth, the winde is still, or bloweth mildly out of the South or West, and the earth is without frost & snow) it is very behouefull to giue them leaue to play, v. and to refresh them.

62.
And in pleasant
weather let them
loose, if it may
be, once afort-
night.V. n. 59. & c. 1.
n. 59.

and the Dressing of them.

C. 3.

themselues: once in a fortnight or three weekes is to be wished, specially after *Capricorne* is past: but if you or the weather shut them in much longer, they will be so faint and feeble through their long restraint, that without very pleasant weather at their comming abroad, a number of them will be chilled while they rest themselues but a little in the open aire. And therfore as often as, for this purpose, the doore is a little opened; alter it not, vntill the weather alter: and when *Aquarius* is halfe spent, if, for feare of a piercing night-stoole, you barre them vp in the euening; let them goe againe in the morning, vnlesse either snow or boisterous windes forbid you. In winter prouide your Hues. v. n. 7.

The still Moneths of Winter being past, the new-yeere entreth with *Pisces*, the first moneth of the Spring: when the Plants begin to sprout, and the Bees to breed againe.

Now therefore, if not sooner, the weather being faire, halfe open the wickets of the better sort, and so let them stand day and night. For the night-cold, being now shiorter and weaker, is not dangerous to such: and the day-cold doth them more good then hurt, causing them to lie still and spare their store, vntill it be fit time to goe abroad. But for the weaker swarmes (which are more subiect to cold, and robbing that now beginneth afresh, v.) shut them close in the euenings; and open them not in the mornings vntill it be warme: and then giue them but roome for a Bee or two to passe, specially those that stand most warme in the Sunne-shine, which maketh the robbers able to endure the siege, whom otherwise the aires chilnesse would quickly discourage.

And now (the Bees beginning to breed, v.) is the time to dresse and fill their Troughs, which all the winter lay neglected.

At this time, in a morning before the Bees come much abroad, lift vp your Hues: and quickly sweeping the dead Bees and other noysomenesse away, and scraping cleane the stooles, set them downe againe, v. and cloome them close as before. For albeit the Bees in time would rid them cleane themselues; yet shall it be good for them to haue it done at once,

63.
The SPRING.

64.
PISCES.

Feb:

65.
The first faire day in Pisces, let the Bees at libertie.

V. c. 7. n. 27.

66.
Now dresse their Troughs.

V. c. 4 n. 12. &c.
c. 6. n. 53.

67.
Clense the stooles.

V. n. 26.

once, that they be neither hindered, nor annoyed therewith: and now and then the carrying out of a dead Bee at this time of the yeere doth cost a quicke Bee her life: for being drawne with the weight of the corps to the cold ground; while she standeth panting a little, she is chilled, and so not able to rise any more.

This cleansing of the stooles, after a calme *Aquarius*, when the Bees haue beeene much abroad, is not so necessarie, and specially for the better stalls.

Those that by their lightnesse you perceiue to lacke honey, you may now saue by feeding, v. c. 8. n. 11. or driving them into others that haue store. v. c. 10. p. 1. n. 15.

Aries is almost as dangerous a moneth, for robbing, as *Virgo*: and therefore you must haue a care in the euenings to shut the Wickets, & in the mornings not, before it be warm, to halfe-open them againe: and where the drie winds and hot sunne haue shrunke the cloome, be carefull to fill vp the chinkes againe.

The poore stalls this moneth would be halfe-shut all the day, as in *Virgo* and *Libra*.

At *Taurus*, and sooner, if sooner you see * cause, remouing the Barres from the better stalls, set the Wickets open: and for the weaker sort, let them all this moneth be shut in the euenings: and in the mornings, as soone as it is warme, be but halfe-opened.

* That is, when either they keepe watch at the doore in the euenings, or be so encreased that they cannot easilly passe to and fro in their worke: for if the passage seeme too streight onely in their playing fit, v. c. 1. n. 59. that maketh no matter.

At *Gemini* take away the Wickets from the better, & the Barres from the weaker stalls: and when this moneth is halfe past, make them all alike: leauing the doores as they were in *Gemini* before. v. n. 38.

March

68.
And feede or
drive light stalls.

69.
ARIES.

70.
The second chiefe
robbing time.

April

71.
In *TAVRVS*
remoue the bars.

May

72.
GE MINI
the Winter-
doores.



CHAP. IIII.

Of the Breeding of Bees, and of the Drone.



HE Drone, which is a grosse Hiue-Bee without sting, hath beene alwaies reputed a greedy lozell: (and therefore hee that is quicke at meat and slow at worke is fittē with this title) for howsoeuer he braue it with his round velvet cap, his side gowne, his full panch, and his lowd voice; yet is he but an idle companion, liuing by the sweat of others brows. For hee workereth not at all, either at home or abroad, and yet spendeth as much as two labourers: you shall never finde his maw without a good drop of the purest nectar. In the heat of the day he flieth abroad, aloft, and about, and that with no small noise, as though he would doe some great act: but it is onely for his pleasure, and to get him a stomach, and then returnes he presently to his cheere.

Fuci cum exerunt, efferunt se se fusim in sublimi, gyroq; volitant: quod ubi satis iam fecerint, redeunt domum, & epulis perfruuntur. But for all this there is such necessary vse of him, that he may not be spared, as without whom the Bee cannot bee.

The generall opinion ament the Drone is, that he is made of a hony-Bee, that hath lost hir sting: which is even as like-lie, as that a dwarfe hauing his guts pulled out, should become a gyant. Others seeing the fondnesse of this opinion, haue thought and taught that the Drone is a different *species*, and that as Bees breed Bees, so Drones breed Drones: which conceit (if the Author had obserued, that at the time of their breeding and many moneths before, there is not a Drone left aliue to breed them) hee would haue liked as well as the

^{1.}
*The Drone no
labourer.*

Hist. an. li. 9. c.
40. / 157.

^{2.}
*Divers opinions
of the Drones o-
riginall.*

The nature of the
Drones.

3.
The Drone is the
Male-Bee.

V. c. 1. n. 53.
V. c. 6. n. 6. & 7

V. n. 18.

4.
Diners reasons
prouing the
Drone to be the
Male.
The first reason
is, that they are
suffered in breed-
ing time only.

V. n. 18. & 19.
Nat. hist. li. 15.
c. 11.
V. s. 5. n. 4.

5.
The second rea-
son is, that the
Drones being ta-
ken away in
breeding time,
the Bees breed no
more.

V. c. 6. n. 18.

August
& 20.

V. c. 7. n. 25.

former. These opinions then, being one as likely as another, let them goe together. [The truth is, they are of the same species with the hony-Bee, but of a different Sex.]

For albeit he be not seene to ingender with the hony-bee, v. either abroad, as other *insecta* doe, or within the Hiue, (where yet you may by means behold what they do;) v. yet without doubt is he the Male-Bee, by whose naturall heat and masculine vertue the hony-Bee, which breedeth both hony-Bees and Drones, v. secretly conceiueth.

The reasons that moue me thus to thinke, are these. First, because although they be great wasters of the Bees store, yet vntill they begin to leave breeding, and haue conceiued for the next yeere, (which some doe about *Leo*, most before *Virgo*) they suffer them: afterward they begin to beat them away. Which if some doe not, before *Scorpio* they die naturally: and from thenceforth all the Winter, vntill the Bees breed new againe, v. there is not a Drone to be had *In rerum natura*. When they are quite gone, then doe the Bees lay no more seeds that yeere, but onely hatch and breed vp those that are already in the celles.

Secondly, as the rather and the more the Drones are, the more and greater are the swarmes; (*Certe quo major fuerit fucorum multitudine, eo major fiet examinum proventus; v.*) so where the Drones are few and late, there is small increase: and therefore if you kill the Drones of a Hiue before the Bees haue done swarming and breeding, (as some fondly haue done before Mid-sommer, to sauie their hony from these lazie lurchers) neither will the swarmes come forth that were formerly bred, nor the stocke thenceforth breed any more. After which time bringing in *Ambrosia*, v. as much as before, and hauing no young ones to spend part, they lay it vp carelessly in their cells, where it corrupteth and turneth to stinking stopping, v. which will cause them so much to mislike their Hiue, that the next *Virgo* they will easilly yeeld to the Robbers, v. And if by your industry they be then preserued; in *Pisces*, when breeding time is, finding their wombes barren, and therefore loathing euen themselues and all, they yeeld their goods to them that will take it: and after-

July
it may not
Octobre

February

after a while, when the strange Bees and they smell all alike, by conuersing together in the same Hiue, and sucking the same hony, away they goe with them to their Drones. But every faire day they will returne to fetch that they leaft behinde them: you may see them flie so thicke to and fro that hiue, as if it were full of Bees: but when night is come, they are all gone.

Thirdly, because *omne simile generat sibi simile*, Every liuing thing doth breed Male, or Female of his kinde, and experience doth teach vs that the Bees doe yeerely breed, as well Drones as honi-bees; v. seeing the honi-bees are females, it followeth necessarily that the Drones are the Males of the same kinde. And therefore in the learned Languages the Drone hath his * Masculine appellation, as the Honi-bee hir feminine.

* *Hic fucus, & cognitus: Abies apis, n. μελισση, cum η feminino. Deborah.*
Melissa the daughter of Melissus King of Crete, being one of Jupiters nurses, is said to have beene by him transformed into the Honi-Bee: which retaineth still her gender, sex, and name. Didymus aij: duas Melissas fuisse filias, Amaltheam & Melissam, qua Iorem puerum caprino lacte & melle nutrirerant. Laet. lib. 1. instit. c. 22. Nec sane rusticus dignum est sciscitari, fuisse mulier pulcherrima specie Melissa, quam Jupiter in Apem conuerst. Columella. lib. 10. c. 2.

Fourthly, we see the like in the likeliest *insecta*, the Wasp and the Dorre: for the manifesting wherof I wil briefly shew you the breeding of them both.

The Wasps nest is begun by one great Wasp, which you may therefore call the Mother-wasp: the which in *Cancer* (or in hot and dry springs somewhat rather) within some hole, vsually made in the ground by a Moale, Mouse, or other meanes, workereth a Comb of the vtrer drix of pales, or other timber, in forme of a round tent hanging by the top to the ouer-part of the hole. This combe containeth about six Cells, of the bignesse and fashion of the Bees cells, wherin she breedeth so many young ones: which, when they are fledge, doe breed as well as their dam: and so enlarge the combe to some eight inches ouer. Then, making more room beneath by moining and carrying out the earth, they hang an other combe vnder the first, by little pinns, and so an other,

6.
The third reason is, that they are bred by the Bees.
*V. * in annot. p. n. 12, &c.*

7.
The fourth reason is, that the wasps and dorres have drones, which are their males

8.
The breeding of wasps by drones.

H.R.1.9. c.42.

August.

and an other, increasing still in the same place till Summer be done. For they goe not forth in swarmes as Bees doe. *Missio, ut apum, nulla vel crabronum vel vesparum sieri solet : sed qui subinde orientur novelli ibidem manent, & alveum, terrâ egestâ, faciunt ampliorem.* When their breeding draweth toward an end, namely in *Virgo* and after, (besides the small or ordinary Wasps, which liein all the vpper combes) in the last or lowest combe, made for the nonce with larger cells fit for larger bodies, they breed also two other sorts, Drones or Male-wasps (which are somewhat bigger and longer then the small Wasps, and without stings as the Drone-bees) and Mother-Wasps, which are like the small ones in all respects, saue that they are twice so bigge. These when they are fledge hauing conceiued, as the Bees, by the Drones; in *Libra*, and sometime sooner, doe flie abroad (as their Drones also doe) gathering for themselues, and searching and prying into every corner as they goe, for their Winter-lodging: and after a while, when the aire waxeth cold, leauing both Drones and small Wasps to the mercy of Winter (which with his first cold-wet wether chilleth and killeth them as they flie abroad) doe forthwith betake themselues to some warme place, as the thatch of an house, a mortice in a post, an auger-hole, or the like; but specially into hollow trees, (which is the cause, why in grounds adioyning to Woods their neasts will be most rife) where they abide till the next spring withc ut any meat, as it were in a dead sleepe: out of the which neuertelless a little warinthe of the fire, or of your hand will awake them at any time. At the blowing of Palme, if the wether be warme, they flie abroad for food: and in *Cancer* or *Gemini*, as I haue said, they begin to nestle and breed. He that killeth one of them, killeth a whole neast of Wasps. *

June or May

* When the old Mother-Waspe hath done breeding, and hir wings are so worne, that she is not able to helpe her selfe, the little ones keepe her so long as they live together. Before the young Mother-Wasps are bred, yo i may easily finde her among the little ones: but when they are fledge, you cannot know her from one of them, but by hir ragged wings.

And

And that the Drone-wasps are the males, some were of opinion in the daies of Aristotle: for thus he writeth; *Si vespam ex pedibus cuperis bombilareq; siveris, advolant que acules carent: quod non faciunt qua aculeata sunt. Itaq; argumento quidam hoc utuntur quod altera mares sunt, altera feminæ: which argument seemeth not vnprouable, seeing the Fowlers counterfeiting the call of the Hen-Quailes catch only the Cocks.*

The Dorre likewise beginneth hir neast single, being more like the Bee then the Waspe is, in that she maketh Honie, and more vnlke in the fashion of hir Combs: for she hath onely a few round cels of the bignesse of grapes, lying flat on the ground one vpon another without any order: the which are made after this manner. First either vpon the gründ in the grasse, or in some shallow hole within the ground, shée prepareth a little stufte which is soft like Wax, but browne and more brittle, of the bignesse of hir head; and therein shée layeth about six or seuen seedes together, compassing them round with the same stufte: which increasereth by little and little as the seedes doe: and when they begin to liue, it growerh into so many seuerall Cells, as there are grubs, each one hauing one to himselfe. When they be come to their bignesse, the Cells, which before were browne and brittle, doe now wax white and tough, that you can scarce teare them. And when the Dorres are ripe, they gnaw their way out at the top. Vpon these they make more in like manner, and the void open Cells they fill with Honie, wherewch they feed both themselues and their youtig, when the weather suffereth them not to flie abroad. All this neast is couered with a little Mousse like a Birds-neast. Vntill *Leo* they breed females onely as the Waspes doe: and then last of all, for propagation of their kind, they breed their Drones, being likewise, as the Drones of Bees and Waspes, without stings. And these, to put the matter out of doubt, within a moneth after when they are ripe, doe openly engender with their females, as the chaffers doe, but their mates they choose in the neast, and are carried away by them. After which time the females breed no more till the next Summer,

*If you take a wasp
By the feet and suffer
Hist. li. 9. c. 41. it to buzz:
those which are
without a sting
nearly do it.*

^{9.}
The breeding of
Dorres by drones.

27 Decembe

July

v. n. 19.

though you may see them gathering, and flying about somewhat longer then the Waspes. In *Sagittarius* they betake themselues to their Winter-rest, where they lie single as the Mother-Waspe in a sleepe or swiuet. But the Drone-dorres, as the Drone-waspes, are destroyed by the weather: not one afterward to be seene till next *Leo*, when the females breed new againe. But one thing in the Dorres and Waspes is more strange, then in the Bees. For whereas the Bees alioone as they haue bred their first brood of females, doe presently breed Drones, v. (both which, when they are ripe, multiply together) the young Dorres and Waspes in the beginning of Summer, doe not immediatly take the Drones (for then there are none) but receive from their dams, togither with their nature and being, that Masculine seed, whereby when they are ripe they breed all the Summer following, vñll in the end they likewise conceiue by their late-bred Drones for the next yeaer, both for themselues and the young that shall come of them.

20.
The first reason is
the apparent
signes of their
Sex.

21.
Aristotles Ob-
jection answered.
Hull. 5. c. 21.
Generat. I. 3. c.
10.

v. n. 22.

By this time thou wilt say with me, that the Drone is the male-Bee: Whereof if some curious Chirurgion would make an Anatomic, he should easily discerne *Duos amplos & candidos testes*, two lawfull witnesses of his Masculine Sex.

This truth began to appearre many yeaeres agoe, even in Aristotles time. *Aliqui* (saith he) *mares esse fucos, feminas vero apes esse contendunt*. Which opinion he reciteth in an other place. *Sunt qui fucos mares esse, apes feminas arbitren-
tur*. Where though he doe not approue it; yet hath he no other reason against it but this, *Arma ad pugnam viresq; exer-
cendas nullis feminis à natura tribuuntur*. Nature hath armed no female for fight and force against the male: but the Bees haue power and weapon to chastice the Drones: v: and therefore the Drones cannot be their males.

The weaknesse of which reason I maruail he did not see, seeing in all the kinde of * Hawkes the female doth command the male, as being both stronger and better armed. Whereunto may bee added the example of the *Amazons* reigning in his time: who by force of armes subdued many Kingdomes of men, and held them in subiection: like vnto which,

which, it is maruaile but there were then some mankind Vira-goes in *Greece*, as well as there be now in other Countries. Which thing, if nothing else, the experience of his Masters + Master might haue taught him.

* The first instance is beyond exception: neither doe I see how the other can be answered, valesse peraduenture it be replied that such rule is against Nature.

+ Aristotle his Master was Plato, whose Master was Socrates, whose Master was Xantippe that thundring shoutring Queene of Shrewes. Xantippe Socratis Philosophi vero morsa admodum fuisse fester & iugiosa: irarumq; & molestiarum mulierium per diem perq; noctem scabebat. A. Gellius l. 1. c. 17. Socrates, cum in eum Xantippe prius convitia & maledicta ingeffisset, posca vero & sordidus aquis perfudisset, Nonne (inquit) dicebam Xantippen tonantem quandoque pluviaturam? Laertius lib: 2. in vita Socratis.

But you must vnderstand that the Philosopher speaketh thus, not dogmaticè but disputatiue, onely by way of reasoning: for in the end of the same chapter he yeeldeth himselfe to haue no certaine knowledge thereof. *Non tamen satis adhuc explorata qua eveniant habemus.*

TO returne therefore to our purpose, the Hony-Bees ha-
ving, as those other *insecta*, conceiued by the Drones; the best about *Pisces* when they first gather vpon flowers, others in *Aries*, and the weaker later, begin their breeding: which is continued all the Summer, euен to the end of *Virgo*. But the chiefe time is in *Aries*, *Taurus*, and *Gemini*: which moneths yeeld *Ambrosia* the Schadons food, in greatest plen-
tie, varietie and vertue.

The Bees will be sure to serue themselues first, their first generation being alwaies females: which they breed after this manner.

Close vnder the Honie (which is at that time altogether in the vpper parts of the Combs) in the middle of the bot-
comes of the void Cels, as the Wasps doe on the one side, they lay their seedes, about the bignesse of those which the Butter-flie leaues vpon the Cabage-leaues: but of different colour, the Bees being white like Wasp-seedes, and the Butter-flies yellow. And so they descend by degrees toward the neather part of the Combes, filling one Cell after in other. Although when the chiefe breeding is past, they

12.
When the Bees
begin to breed.

✓ Feb:
✓ March
vtng.

13.
The chiefe time
of breeding.

14.
The first breed
are females.

15.
The manner of
their breeding.

16.
The Bee-seed is
first turned into
a Worme.

they doe not precisely obserue this order, but lay vp their Honie promiscuously among the young Bees, where they finde the Cells void. The Bee-seed at the first sticketh vpon one end, vntill it be a liue Worme or Grub: as soone as it liueth it is loose, and lyeth in the bottome of the Cell round like a ring, one end touching the other, till so the bottome can no longer containe it: after that, it lieth along in the Cell till it be growen to the full bignesse of a Bee: and then doth the Worme die, and becommeth void of all motion and sense: and so is shut vp in the Cell, the Bees couering the top close with wax.

17.
The Worme be-
ing dead grow-
eth to the shape
of a Bee and then
liueth againe.

The Grub being now dead, presently beginneth the alteration from a Worme to a Bee: which, is two-fold, in shape and in colour: the first alteration in shape, is the diuision in the middle; then the other diuision betweene the head and shoulders, whence it is called *insectum*: after that, the growth of the head, legges, wings, and other parts into their shape and fashion. The first that altereth in colour from white to browne is the vpper part, and of the vpper part the head, and of the head the eyes.

The vniforme shape and white colour of the Worme, being thus altered into the proportioned shape and brownish colour of a Bee, she beginneth to moue againe, and to liue hir second life: and then breaking the couer wherewith she was inclosed in the Cell, she commeth forth a flying Bird.

Hist. and. s. c. 22. *Fætus posito incubant, exclusus inde vermiculus, dum parvus est, jacet in favo obliquus: postea sua ipse facultate se erigit, tibumq; capit. Fætus apum & fucorum candidus est: ex quo vermiculi fiunt, qui in apes fucosq; transiunt.* And all this within the space of a moneth. Yea in swarming-time, when the Hives haue more heat, partly from the aire, and partly from the multitude of Bees; when also the Schadans never want their fill of Nettar, Ambrofia, and faire water continually brought in fresh and fresh vnto them; I haue knowne this effected in three weekes: although Plinie speakes of more then twice so long atime. *Fætus intra 45. diem peragitur.*

18.
The breeding of
the Lady-Bees.

But the Lady-bees are bred in the seuerall Palaces of the Queen,

and of the Drone.

Queene, v. after a peculiar and more excellent manner. For the golden matter whereof they are made, is not turned into a Worme at all; but immediatly receiueth the shape of a Bee. *Primordium regum colore cernitur fulvo, corpulentia mellis crassioris, magnitudine illico proximâ sua futura soboli: nec primum ex eo vermiculus gignitur, sed statim apis.* Item, *Higinius negat ex vermiculo, ut ceteras apes, fieri ducem; sed in circuitu favorum paulo majora, quam sint plebeij seminis, inveniri foramina repleta quasi forde rubri coloris, ex qua protinus alatus rex figuratur.*

When the old Bees haue ended their first broods of females, then last of all after the same manner in wider Cells made for the nonce, v. they breed the Male-bees or Drones: as was long since obserued, *Sunt fuci sine aculeo velvet imperfecta apes, nouissimeq; à fessis & jam emeritis inchoata, serotinus fœtus.* And therefore somestalls doe not dronie before Cancer, nor many before Gemini, nor any before Taurus: although you may see the* Nymphes of good stalls abroad in Aries, of others in Taurus, and of all in Gemini. By chance some few Cephens may be bred betime with the females: but they, as comming out of season, are not suffered to live.

* The young Bees are called Schadons: *Schadones sobolem dico.* Hist. I. 5. c. 22. The brood of females, when they haue the shape of Bees, are called Nymphs, and the young Drones Cephens: *Cetera turba, cum formam capere cepit, Nympha vocantur, ut fuci Cephenes.* Pl. li. 11. c. 11.

These Cephens or Drones, when they are fledge, doe not onely serue for generation; (as hath beene shewed) but also doe helpe the females much, by reason of their great heat, in hatching their broods. *In fœtu adjuvant apes, multum ad calorem conferente turba.* And for these causes they are alwaies in breeding-time mingled with them throughout the Hiue. Although afterward (when they haue beene much beaten, and can goe no where single, but one or other will be on their jacks) they gather all together in a cluster, for their safetie in one side of the Hiue: so that it is true at some time which the Philosopher spake indefinitely, *Tenent alvei locum penitorem.* And yet their hanging together will not

C. 4.

V. c. 6. n. 11. c. 12

Hist. I. 5. c. 22.

Colum. I. 9. c. 11.

19.

When the Drones are bred.

V. c. 6. n. 20.

Nat. hist. li. 11.

c. 11.

20.

When they come

abroad.

the hangours

the re are found

straight holes some

what larger than

those of the

Seed filled as it

were with a solid

substance of a red

colour, and full'd

31

Two uses of the

the winged

Drones.

King is at

first made

deformed.

Nat. hist. li. 11.

c. 11.

22.

Where they ly.

Hist. I. 9. c. 40.

extraordinary
idea that
the Queen
does not
hast through
the state.
of aira
but at once
from the
Egg she
becomes
a Nymph.

When the Drones are bred.

the Leader is
formed of a worm
as other Bees

but that in the

When they come to range
abroad.

the hangours

the re are found

straight holes some

what larger than

those of the

Seed filled as it

were with a solid

substance of a red

colour, and full'd

31

Two uses of the

the winged

Drones.

King is at

first made

deformed.

Nat. hist. li. 11.

c. 11.

22.

Where they ly.

serue their turne : for the Bees, when they are disposed, will quickly make them part, and depart. When there is no vse of them, there will be no roome for them.

23.
The male-Bees
are subject to
the females.

Nat. hist. li. 11.
cap. 81.

For the Drones are but vassals to the Honie-bees: which as they doe excell them in vertue and goodnesse, so doe they also in power and authoritie, ruling and ouer-ruling them at their pleasures. *Sunt quasi servititia verarum apum: quamobrem imperant ipsis.* For albeit generally among all creatures the males, as more worthy, doe master the females; yet in these, the females haue the preeminence: and, by the Grammarians leaue, the Feminine gender is more worthy then the Masculine, *Hec apes then hic fucus, hac Nympha then hic Cepheus.* But let no nimble tongued Sophisters gather a false conclusion from these true premisses, that they, by the example of these, may arrogat to themselues the like superioritie: for *Ex particula non est syllogizare*, and he that made these to command their males, commanded them to be commanded. But if they would so faine haue it so, let them first imitate their singular virtues, their continuall industry in gathering, their diligent watchfulnesse in keeping, their temperance, chastitie, cleanliness, and discreet *œconomie*, &c. And then, if they meeete with such dull Lubbers as these Drones are; they may with leesse blame borrow a point of the Law, and enjoy their longing. Yet when they haue it, let them vse poore Skimmington as gently as they may; especially in publike, to hide his shame.

And this they may note by the way, that albeit the females in this kinde haue the Soueraigntie, yet haue the males the lowder voice: as it is in other liuing things, Doves, Owfils, Thrushes, &c. the males being knowne by their sounding and shrill notes from the silent females. Yea the wiues themselues will not suffer that Hen to liue, which presumeth to crow as the Cock doth: nature teaching, that silence and soft noise becommeth that Sex.

24.
When the Bees
leave breeding,
and beat away
their Drones.

The Bees breeding or laying of seeds beginneth to cease, in some by *Leo*, in some not before *Virgo*. After which time these * *Amazonian Dames*, hauing conceiued for the next yeare, begin to wax wearie of their mates, and to like their roome

room better then their company. At first not quite forgetting their old familiaritie, they gently giue them Tom Drums entertainment: they that will not take that for a warning, but presume to force in againe among them, are more shrewdly handled. You may sometime see a handfull or two before a Hiue, which they had killed within: but the greatest part flyeth away, and dieth abroad.

* Amazones bellicosæ erant Scythicæ mulieres, quæ cum viris exulan-
tes in Cappadocia ora juxta amnum Thermodonca confederunt: ubi, vi-
ris plerisq; per insidias accolarum trucidatis, reliquos qui domi reman-
scent, ut ipsæ solæ rerum potirentur, interficiunt: & armis sumptis etiam
cum contemptu hostium se strenue tuentur, & imperium longe lateq; in
Europam & Asiam partem tandem proferunt. Ne vero genus periret, fini-
tum tanquam maritis utuntur: quos officio functos abigunt: Atq; quot
patiunt virgines sovent, & armis exercent; masculos vero duræ enecant:
vnde eas Æorpata i. Viricidas appellant Scythæ, ut tradit Herodot. l. 4.
Prima harum regina Marthesia vel Marpesia dicebatur: quæ clares qui-
dem peperit filias, Antiope, Orithyam, Menalippen, & Hypoliten: è
quibus duæ majores natu inatri successerunt, cæteræ imperium non sunt
adeptæ. Amazonum itaq; regnum apum rempublicam aptissime refert:
Marpesia apum reginam quæ plures solet producere fœtus: Antiope &
Orithya primores filias, quæ primum & secundum examen educunt, ijs-
que moderantur: Menalippe & Hypolite eas principes quæ aut nequa-
quam aut nequicquam dominantur. Nam post secundum examen aut in al-
veis morantes morte multantur, & aut egressæ fere fame pereunt, &c. 8. n. 4.
Vtiusq; etiam populi mores non minus convenient: nam & apes feminæ
sunt bellicosæ, quæ non modo Europam & quandam Asiam partem, ut illæ;
sed universa orbis terrarum imperia possident: quæ sui sexus prolem summa-
itidem cura enutrientes, mares omnes tam viros quam filios cædere solent:
ut & ipsæ vere Æorpata dici possint.

But because in the same Hiue they doe not leaue breeding
all at once; therefore neither doe they kill their Drones all
at once: but at the first taking away onely the superfluous,
they suffer as many as they need, to remaine longer: some
sometyme a whole moneth after.

The forward stockes, that haue cast their last swarne in
Gemini or soone after, begin at Leo: yea of those in the be-
ginning of Gemini some somewhat sooner, the backward,
that cast not their last swarne much before Leo, may stay till
the end of the same moneth: but vsually about Virgo, ora
weeke after, they make a cleane riddance of them.

25.
The Bees com-
red to the Ama-
zons. Herodotus

26. 6. 1. v. 7.

26.
They rid not
their Drones all
at once.

27.
When forward
stocks begin.

28.
When the back-
ward.

29.
When full stockes
that haue not
swarmed.

30.
When those that
are ouerswarmed

V. 11. 4.

31.
Sometime the
Bees cast out
even the white
Cephens.

32.
Timely ridding
of Drones a good
signe.

33.
Sometime they
rid their Drones
in the Spring.

34.
And afterward
breed new again.

35.
Sometime it is
good to helpe the
Bees in this work.

Those stockes that being full haue not swarmed at all, because they are rich and feare no want, vse to suffer them so long and sometime longer, euen to the end of this moneth. Those that haue ouer-swarmed themselues, finding their paucitie and weaknesse, wax desperate and carelesse of their estate: and therefore sometime keepe their Drones till toward the end of *Virgo*, sometime kill them not at all: but let them alone, vntill they die by nature: which is not long after. For few of them can liue till *Libra*, and the youngest not to the end of that moneth. v. Take heed to such stalls, for they are likely to die.

Some are so prouident, that to prevent this trouble and saue their Honie, they draw the poore Cephens out of their Cells before they be ripe, or come to their second life. Such you may safely trust.

Those that soonest rid their Drones, are likely to be forwardest the next yeaer.

Sometime the Drones are beaten away in the Spring. For when forward stalls (which in their heat are bold to fly a-broad when others dare not wagge) haue lost many of their Nymphes in a tempestuous and stormie Spring; they will therefore destroy their Drones also. But hauing formerly con-ceuied by them, they then begin the world anew, as after an other Winter: and first breeding Nymphs, in the end they breed Cephens againe. Which if they can compasse before swarming time be past, they will swarme that yeaer: otherwise they will be fat and full, and excellent good either to keepe or kill.

Because the stockes that haue cast often, doe beare with their Drones so long, although there be twise so many as bee needfull for the Bees that are leaft; therefore (to saue the Honie which those Wolmores would devoure) it is not amisse to preuent the Bees, and presently after the last swarne to diminish their number, with a Drone-pot cloomed to the doore: specially of them you meane to take, or see much opprest with superfluous multitude, v. c. 3. n. 43.



C H A P. V.

Of the Swarming of Bees, and the Hewing of them.



HE stocks hauing bred and filled their Hives doe send forth swarmes. A swarne doth consist of all such parts as the stocke doth: namely of a Queene-bee, Honie-bees as well old as young, and Drone-bees.

If any man desire to see the Queene, he hath now opportunitie, when she goeth forth with her swarne: v. and dead ones hee may finde many before the stooles, when the stocks haue cast their last swarmes, v. and also when many meet in one swarne, v. c. 1. n. 7. But then, being dead and shrunke together by the force of the poison, they lose much of their stature and comelinesse.

Men thinkē that the swarne consisteth onely of young Bees, and that the old Bees onely tarrie behinde: but indeed (though it may seeme strange) the swarne is no younger, then the stocke: for there are in both of both sorts. The young Bees remaine in the stock with the old for their defence, and for the greatest labours; v. and the old ones goe with the young in the swarne for their aid and guidance in their worke.

The Drones they take with them for propagation of their kinde. v. And therefore those swarmes that haue many Drones will surely prosper: and if they be rathe will swarne againe, vnlesse they bee ouer-hewed: whereas those that haue few or none, will increase little or nothing all the Summer after.

A warme, calme, and showring spring causeth many and

The parts of a swarne.

When you may see the Queene-bee.

V. n. 34.

V. n. 35.

The swarne no younger then the stocke.

V. c. 1. n. 57.

V. c. 4. n. 3.

Many Drones in a swarne a good signe.

A kinde Spring for swarmes.

V. c. 7. n. 60.

Hist. L. 4. c. 22.

V. c. 4. n. 13.

V. c. 6. n. 38. 39.

etc.

V. c. 16. p. 1. &

iii. & iiiij. in v. 3.

V. c. 8. n. 5.

rathe swarmes, though sudden stormes doe hinder them. v.

Augent mella siccitates, sobolem imbræ.

* Dry weather makes plenty of hony, and † moist of swarms. But note that the chiefe time for breeding swarmes is the Spring, v. and for honie-gathering the Summer: v. so that when a dry Summer followeth a moist Spring, the Bee-folds are rich. If the Summer be also moist, the increase of Bees will be greater: but, because of the scarcity of hony, this increase will prooue a decrease: the more swarmes you haue at the end of this Summer, the fewer stalls shall you haue at the beginning of the next. For, except some faire rathe swarmes, and some good stockes, which cast betimes or not at all, they die all for hunger; when they haue spent their owne pittance, and spoiled their fellowes. How to prevent this pouerty, see note 11. & * in 20. and to prevent the losse & spoile that would come thereof, take the light stockes, together with the small and late swarmes, v. feed the midling sort, v. and be sure they be not ouer-hued. v. n. 45.

* The reason is, that in hot and drie weather the hony devves are rai-
sed, and the adventitious moisture is drained from the flowers, the pure
naturall iuice onely being lefft in them: of both which they gather all the
day long without interruption.

† The reason is, that the weather keeping them in, they can doe nothing but breed and hatch their schadons: and when they goe abroad, they bring in grosse Bee meat, *Ambrosia* and water, wherewith to feed them; but can finde nothing fit to lay vp in store. So that moist weather giues them two causes of swarming, plenty of Bees, and penury of hony: the one makes them able, the other willing: and then neither winde, nor cloud, nor raine can stay them. Whereas in times of plenty it is other-
wise. v. n. 20.

6.
Swarming weather.

V. n. 20.

7.
The swarming
hours.

Likewise, in warme and calme weather the swarmes de-
light to arise, but specially in a heat-gleame, after that a
showre or gloomie cloud hath sent them home together: in extreme hot and dry weather not so: v. in so much that
stalls being full and ready to fwarme with the first, are some-
times so kept backe with cold dry windes in *Gemini*, and with
extreme heat and drought in *Cancer*, that they haue not
swarmed at all that yeere.

The swarmes vse to come forth betweene the hours of
nine

May
June

—
The swarming
hours.

and the Hiving of them.

C. 5.

nine and three, and sometime an houre sooner or later: but chiefly betweene eleuen and one. They choose rather the fore-noone, if the weather please them: otherwise they will stay for a faire houre in the after-noone. This time of the day therefore, in the swarming months, your Bees must continually be attended.

The swarming moneths are two, *Gemini* and *Cancer*: one moneth before the longest day, and an other after.

In some very backward yeres, such as was 1621. & 1622. there haue bin swarmes a weeke in *Leo*, which did well, (the Bramble, that was wont to be a fortnight or three weekes rather, v. not blowing before that time:) Likewise in warme Countries in a kinde Spring, some haue come somewhat before *Gemini*, but this also is rare.

Those that come before the Solstice, in the ascending of the Sunne, are rathe swarmes. Those that come after, in his descending, are late swarmes. But there are few that come in the first fortnight, and they very good: few also in the last fortnight, namely after S. Peters-tide, and they all as bad: vndelesse the backwardnesse of the yeere, when it happeneth, doe mend them.

Note heere that in the Heath-coutrie, swarmes are vsually lateward, namely in the latter part of *Cancer* and the forepart of *Leo*: which some yeeres proue better then the rathe.

Those that swarne before the blowing of knap-weed, come in very good time: before the blowing of blackberies, v. they may liue and doe well: but blackberry-swarmes, specially castlings, are seldom to be kept, as being more likely to die then to liue: and if they liue, they seldom swarne the next yeere. And moreouer they weaken the stocks from whence they came, which otherwise the next yeere would swarne betime: and then one such swarne is worth three of those lateward ones. Wherefore put such backe againe into the stocke: which you may easily doe, so soone as they are hived, by knocking them downe vpon a table close to the doore: their fellowes that are behinde will soone be in with them. And if they rise againe, serue them so till they cease. But if you spie them rising before the Queene be come forth; shut them in a while, and that will stay them.

8. *The two swar-*
wing moneths. *May &*
June

July
V. c. 6. a.

39. *May.*

Rathe swarmes. *June 21.*

10. *Late swarmes.*

June 29.

V. c. 6. a. 39. *July*

11. *Blacke-berie-*
swarmes are sel-
dome to be kept.

^{12.}
A prime swarne
and an after-
swarne.

^{13.}
A stall may cast
four times.

^{14.}
Diuers causes of
breaking the
prime swarne.

^{15.}
One prime-
swarne worth
two after-
swarmes.

V. n. 67. & 68.

^{16.}
The vulgar Bees
appoint the ri-
sing of the fore-
swarmes, & that
upon 4. grounds.

V. 6. I. n. 6. & 7.

^{17.}
Five signes of the
first swarming.
V. 6. 4. n. 20.

A good stocke doth naturally and vsually cast twise ; a prime swarne, and an after-swarne : specially if the prime swarne be so rathe, that the castling may come before the bramble-buds be open : yea and rathe prime swarmes not ouer-hived, in a plentifull yeere may swarne once or twice : although some full stalls doe not cast once, some but once, and some hauing many princes (specially when the prime-swarm is broken) doe cast three or foure times. For sometime it happeneth that, in the swarming, a blacke cloud rising stayeth part of them that are alreadie come forth, and lie about the huies-doore : sometime when they are all vp, either fearing a cloud, or disliking the lighting-place, or being troubled in the huizing, part doth returne.

One prime-swarne is worth two or three after-swarmes, except it be broken : and then if the residue come forth in one entire swarne, that after-swarne may bee the better of the twaine : but if it be diuided into two or three, then will they all be but indifferent: such, except they be timely, or vnted, v. can hardly liue till the next Summer.

The choice of the time when the first colonies, or prime-swarmes shall go forth, the rulers referre vnto the commons : who by reason of their continuall trauell and businesse both without and within, doe best know when all things are readie and fit for them : First within they will be sure that they haue a Prince ready to goe with them : for without a Gouvernour they will not be, v. Then that their Huie be full, so that it may be diuided at the least into two or three sufficient companies : one to remaine with *Marpesia* the old Queene, an other to go forth with *Antiope* the Prince, and a third haplie, which, together with the vnripe brood in the celles, may make an other swarne to serue *Orithya*. Without likewise they will see, first that the flowers be in state presentlie to furnish them with store of wax and hony : then that the weather do please them, as being warme and calme, & moist: valesse, being continually vnseasonable, they haue no choice.

v. 4. in n. 5.

When the Huies begin to be full, they will dronie, or yeeld forth fledge-drones: v. which is a signe that the first brood

brood of nymphes haue beeene a good while flying abroad, and are now able to endure both weather and labour.

Other signes of the Hiues fulnesse and readinesse to swarme are at the Hiue-doore, First, the Bees houering in cold evenings and mornings. Secondly, the moistnesse or sweating vpon the stoole. Thirdly, their hasty running vp & downe. Fourthly, their first lying forth in foggy and sultric mornings & evenings, & going in again when the aire is cleers.

When they will swarne, sometime they first gather together without at the doore, not onely vpon the Hiue, but vpon the stoole also: where when you see them begin to hang one vpon another in swarming time, and not before, and to grow into a Cluster that couereth the stoole in any place; (specially if there be Drones among them) then be sure they will presently rise, if the weather hold. The first that come forth wil increse that Cluster to some fourth part of the swarne: and then begin they to flie away, first out of the Hiue, and after from the Cluster. But commonly some few of them doe first flie forth and play to & fro the Hiue-doore, so to till out more company vnto them: and when by this meanes they haue gotten out so many, that you may see them begin to dance v above the Hiue; then doe they hastilie issue forth and swarne. *V.2.340*

But heere you must note, that as to fill the Doore, or to lie forth a little now and then in foggy or sultric mornings and evenings, (which is because then they are most offended by heat within, and can best endure the aire abroad) and otherwise to go in againe, is a signe that the Hiue is full, and therefore ready to swarne; so to lie forth continually (as in extreme hot and dry summers they vse to doe) vnder the stock or behinde the hiue, &c. (specially after Cancer is come in) is a signe and cause of not swarming. For the Bees, knowing by nature that the greatest companies doe prosper best, vntill they finde themselues so pestered with heat and throng of multitudes, that the Hiue can scarce hold any more, will haue no minde to swarne: and when they haue once taken to lie forth, the hiue will alwaies seem empty, as though they wanted company.

One cause of their lying forth, is stormie and windie weather

48.

The signes of present swarming.

49.

To lie forth ~~comes~~
sually is a
signe they will
not swarne.

June

50.

The causes of
their lying forth.

ther, not suffering them to swarne when they are ready : for when their number is growne so great through their continuall breeding, that the Hiue cannot hold them, seeing they may not swarne, they must needs, for want of aire & roome within, lie without : which when they haue once caught, they will hardlie leaue: and the longer they lie out, the lother they are to swarne.

An other cause of their lying forth, is continual hot and drie weather, specially after the Solstice : which causing plentie of hony both in plants and dewes, their mindes are so set vpon that their chiefe delight;

Virg.

(*Tantus amor florum, & generandi gloria mellis*)
that they haue no leisure to swarne : although they might most safelie come abroad in such weather, which would not suffer the weakest Nymph to fall.

And when by continuance of such honie-weather they are once sufficientlie prouided, they will then be loth to leaue the sweet fruits of their labours, and to change their full store-houses for that which makes giddie House-wives. But if they haue once begun acombe without where they lie, the matter is out of doubt. Whereas contrarily in wet and scanty Summers, no weather will stay them from swarming as soone as they are readie : although by that meanes (vnlesse they be rathe, or the weather sodainelie mend) most as well of the flockes as swarmes are like to die for hunger: & therefore, as neere as you can, so * order the matter, that your swarmes may come betime. For rathe swarmes and their stocks, that haue the summer before the, proue alwaies good.

But for those stocks, which not swarming in *Gemini* happen afterward to lie forth, this may be a remedy.

First keep the Hiue as coole as may be, by watering and shadowing both it, and the place where it standeth: and then enlarging the doore to giue them aire (alwaies prouided that there be no backe-doore in the shadie parts of the Hiue) moue the cluster gentlelie with your Brush, and driue them in.

If yet they lie forth and swarne not; (though they haue had fit weather two or three daies) then the next calme and warme day, betweene 11. and 1. of the clocke, or within an houre sooner or later, (when the Sunne shineth, and you see

V. n. 5.

* By hausing faire and fat young stockes, in a good stan-
ding, not ouer-
hued, and well
kept.

21.

The remedy and
meanes to make
them swarne.

2

no clouds comming to hide it) put in the better part, at the least, of them that lie out, with your Brush; and the rest gentle sweep away from the stoole, not suffering any to cluster againe. These rising in the calme heat of the Sunne, and flying about before the Hiue, will make such a noyse, as if they were swarming: which their fellowes hearing, will happlie come forth vnto them, and so begin to swarne.

If this doe not serue, but that returning to the Hiue they lie forth againe; then reare the Hiue high enough to let them in, and cloome vp the skirts all but the doore.

But if notwithstanding all this they doe not swarne; then assure your selfe that either they haue no Prince bred to goe forth with them, or else they are fat and full of honie, which they are resolued not to leaue.

And then if it be before Mid-Cancer, & the hony-weather hold; your best way is to double the stall, by turning the skirt of the Hiue vppward, and setting a leere prepared Hiue fast vpon it: into which they will ascend, and worke and breed there as well as in the old. *v.* In the end of *Virgo* driue them all into the new Hiue, (which then, if the weather haue held good, will be full of wax and hony) and take the olde for your labour. But if Mid-Cancer and the hony-dewes be past, (because they want time and meanes to store the void Hiue) let them stand: such a stall will be verie good to be taken; or, being young, to be kept. *v.* But first replenish some ouer-swarmer with his excelle or lying out (specially if you meane to take him) thus.

When all hope of their swarming is past; in some euening (while it is yet light) holding a Hiue vnder those that lie out, cut them off from the stoole with a * tight thread: and carrying them to an ouer-swarmer that you would mend, knock them downe on a Table close before his Hiue: into which, because they come without a Prince, they are quietly admitted, and quickly vntited vnder one common Commander.

The manner of doubling a stall is this: Hauing first measured the Hiue about in the largest place, prouide a leere splicted Hiue of the same size and compasse: make ready also two square stickes 13. or 14. inches long; and an inch thicke at one end, and halfe an inch at the other: these two

22.
What is to be
done to those
that by no means
will swarne.

V. n. 24.

Jane

Regrett

Jane

V. c. 10. p. 1. m. 3.

23.
How to replenish
an ouer-swar-
mer.

* Held straight
betweene two
hands.

24.
How to double a
stall.

sticks lay parallel ouer the hiue five or six inches apart, and each of them a like distance from the middle of the Hiue, with both the thicke ends one way to size out the doore for this doubled stall: and so tie them with needle and thread to the skirts fast in their places. These stickes doe also serue to keepe the Hiue from slipping, and to save the Bees, that otherwise might be prest to death betweene the two skirts. Then in a faire night, so soon as it is dark, reare thefull Hiue with three bolsters, two on the West side, and one on the East, some foure or five inches high, (or with a double rest) to let the Bees in: and couer both it and the stoole with a large Mantle. Then make a Brake behinde the stoole of foure stakes, 2. two foot, and 2. foure foot long, pitched fast in distance equall, and fit to conteine the full Hiue: which you may be sure of by fitting it to the leere Hiue, being of the same compasse. One of the short stakes set close to the middle of the backe of the stoole, the other Northward opposite to it: one of the long ones on the West part, and the other on the East. Then right in the middle, betweene the stakes, digge a hole in the ground halfe a foot deepe; and of such compasse, that being halfe filled with a wisp of straw, it may firly receiue the top of the Hiue, and so the Hiue may stand vpright and fast in the Brake. Then pare away the inner edges of the tops of the short stakes, that the Hiue in the setting downe may not stay against them: and taking vp the West-stake, sticke it by you.

These things thus prepared, your selfe standing on the West side of the Brake, and your assistant on the same side of the stoole at your right hand, (both in your complete harness) v. let the assistant take hold of the Hiue, &c, yeelding the top toward his breast, reare the fur-side of the skirt from the East-bolster. When you see it fitting, embracing the hiue as neere the skirt as you may, lift it vp sheer from the other two bolsters, and set it downe warily in the middle of the Brake, with the top in the hole as vpright as you can, and the doore to the backer part of the stoole, that it may stand South-ward as it did before. And presently let your assistant, being readie, place the leere prepared hiue even vpon it, with the thick ends of the stickes South-ward: and doe you

you put the long stake into his place againe. Then cloome the Hiues together with rolles, flatted, that none of the cloome fall in among the Bees, leauing open the space betweene the sticks ends for the new doore of this double hiue. Lastly put on the hackle, and gird both it and the long stakes to the leere-hiue, about the middle with a Belt, and about the top with a With. And so let them stand till after the end of the *Dog-daisies*, whien Bees are taken. v. But in no case let the doing hereof be deferred beyond the time prescribed, v: lest you haue little or nothing for your labour.

At the Vindemie, in a faire calme morning before any Bees be abroad, shut vp close all the stalls in your Garden: and those that stand next couer with sheetes and blankets, lest some of the younger sort mistake, and tarrie at their doores till they be chilled. And when the Sunne is an houre high, and the aire waxeth warme, hauing first parted the new Combs and the old with a long knife, take off the vpper hiue or *Receiuer*, & set him vpon the stoole in the old place: B v i besure, &c. as it followeth, c. i o. p. 1. n. 15. If you see the *Receiuer* be very fat, or feare the *Queene* be hurt, or not in the *Receiuer*, your best and safest way is to takethem both: for if they be ouer-fat or want a Ruler, vndoubtedly they will not prosper.

The signes of after-swarmes are more certaine. For where-
as the rising of the prime swarne is appointed by the vul-
gar, whose chiefe rule is the fulnesse of the Hiue; the Hiue
being now well emptied, for other swarmes there needeth
some other direction, which the Rulers themselues doe giue
by their voices: without which that stocke will swarme no
more that yeare. And yet the choice of the houre, yea and
of the day among fourre or fve is permitted vnto them, as best
knowing the disposition of the weather.

When the prime swarne is gone (if the stocke shall cast
any more) the eighth or ninth euening after, sometime the
tenth or eleventh, the next Prince, when she perceiueth a
competent number to be fledge and readie, beginneth to
tune in hir treble voice a mournefull and begging note, as if
she did pray hir *Queene-mother* to let them goe. Vnto
which voice if the *Queene* vouchsafe to reply, tuning hir

P. c. 10. p. 1. n. 1.

v. n. 22.

25.

How to drine all
the Bees into the
new hie, and so
to take the old.

Artificial
Swarne.

26.

The signes of
after-swarmes

27.

The rising of the
after-swarms is
appointed by the
Rulers.

28.

The Bees Musick

V. n. 36.

Base to the young Princes Treble, (as commonly she doth, though sometime scarcely intreated in a day or two) then doth she consent. And therefore, vnlesse foule weather stay them till it bee too late, *v.* you may assuredly looke for a swarme. Which seldome ariseth the next day, although the weather be verie pleasant; or the next day, vnlesse the weather bee verie pleasant: but after the third nights warning, they will accept indifferent weather, such as the prime-swarmes will not come abroad in. And as the Queenes voice is a grant, so hir silence is a flat deniall: the Prouerbe heere hath no place, *Quis tacet consentire videtur*: For without this Consent there is no Consent.

29.
The Princes
part.

This song being contained within the compasse of an Eight from *G-sol-fa-vt* to *C-sol-fa*, the Prince composeth hir part within the foure vpper Cliefes *G, A, B* and *C* vsually in triple moode, beginning with an odde *Minim* in *G-sol-re-vt*, and tuning the rest of hir notes, whereof the first is a *Semibreife*, in *A-la-mi-re*. Sometime she taketh a higher key, sounding the odde *Minim* in *A-la-mi-re*, and the rest in *B-fa-b-mi*. Sometime, specially toward their comming forth, she riseth yet higher to *C-sol-fa*, holding the time of three or foure *Semibriefes*, more or lesse. Now and then shee beginneth in duple time some two or three *Semibriefes*, but alwaies endeth with *Minims* of the triple Moode.

30.
The Queenes
part.

The Queenes part, contained within the foure lower Cliefes, consisteth of *Minims* altogether in triple moode; commonly in *Fa-fa-vt*, sometime in *C-sol-fa-vt*, sometime in the other two *Cliefes* betweene them: continuing hir tane the time of nine or ten *Semibriefes* more or lesse.

31.
The other Ladies
parts.

Sometime a third Princesse imitating the Queenes voice in time, though differing haply in tune, ioyneth with them, the more, with their full noise, to incite the swarme to goe, that hir turne may come the sooner. And sometime a fourth also interpoleth hir *Minims* to fill vp the Quire. But none dare counterfeit the voice of the chiefe Prince, for that were treason to hir person (and yet sometime one of them, in hope to part the swarme, will steale out with hir:) which, if the swarme be not parted, or being parted be put together, costeth her hir life *v.* as well as the liues of some of hir followers.

V. C. I. n. 7.

lowers. Notwithstanding each of these, when hir elder sister is gone, and hir turne next, changeth hir note, begging in *Orithyas* tune leaue to be gone too: which as sometime the Queene granteth vnasked, beginning first hir selfe; so sometime by hir silence she denieth, though mournfully intreated: and then the swarne tarieth, and the poore Ladie must die.

With these various and harmonious notes, answering one an other, and some pawses betweene, they goe solemnly round about the Hiue, so to giue warning vnto all the company. This they continue daily vntill their swarming: but you may heare them best cuenings and mornings. Which Musick as it cannot but please and delight them that listen to it; so must it be most sweet and pleasant to the young Prince hir selfe, vnto whom therby is proclaimed a Warrant, not onely of hir life, but of a Kingdome also: both which otherwise she were sure to lose.

In this *Melissomelos*, or Bees Madrigall, Musicians may see the grounds of their Art: first their *Modes*, sometime the triple or imperfect of the more, sometime the duple or imperfect of the lesse: then the tunes of the six notes, *ut, re, mi, fa, sol, la*; whereof the Queene soundeth the first toure, and the Prince the other two, together with the doubling of *fa-sol* in two higher Clifies, to make vp the full *Eight*: and lastly the six Concordes, an imperfect *Third*, a perfect *Third*, a *Diateffaron*, a *Diapente*, a *Sixt*, and a *Diapason*. And if any man dislike the harshnesse of the *Seconds* and *Sevenths*, which now and then hit among them; he sheweth himselfe no experienced Artist, which knoweth not that as well in *Musick* as *Oeconomick*, there must sometime be Discords: yea and that in either they haue their laudable vse, as seruing to make sweet Concordes the sweeter. So that if *Musick* were lost, it might be found with the * *Muses* Birds.

The seuerall parts of whose Song comprising these mentioned notes, with pauses interposed (as I haue at seuerall times by a Winde-instrument, whose notes can neither rise nor fall, attentiuely obserued) I thought good heere to prick downe, that you may see in them all these particulars of their Naturall Art. Onely I cannot altogether warrant the Conclusion: because in that confused noise, which the buzzing Bees in the busie time of their departing doe make, my dull hearing could not perfectly apprehend it: so that I was faine to make vp that, as I could. But I am sure, if I misse, I

32.
In the Bees song
are the grounds
of Musick.

* Var. 1. 3. c. 15.
V. Praefat.

CONTRATENO

The image shows a musical score for a piece titled 'A Song of the Monarchs'. The score consists of two staves of music with corresponding lyrics in French and English. The lyrics are as follows:

A Song of all States the Monarchie is best, So of all Monarchies that Fe- wick nine, Of They work in common for the common weale: Their labour's reblete to maintaine their state: Their

The music is in common time, with a key signature of one sharp. The vocal parts are labeled 'I.' and 'MEANE.'

famous Amazons excels the rest, That on this earthie Sph're hanc ever bin, VWho's lit- le hearts in
 Hexa- gonis no Be-za- leel, for curious Art may passe, or imitate, One Sou'raign and but

 weaker sex (so great in field: No povers of the might' est Males can make to yeld: They living aye,
 one command's this people loyall, the great Marpese vvith plenty blest of issue roy- all: An- ti- o- pe,

most sober and most chaste, Their paine-got goods in pleasure score to vast,

When so increased is this prudent Nation,
That their owne limits cannot them suffice;
To seeke new Cities, for new habitation,
They send abroad their num'rous Colonies:

Antiope the prime Prince gone,
Ornitha loone
Of her Queen-mother, making mone,
Begs the like boone:
That with her traine her fortune she may seeke:
And this sh. sings in measures mournfull sweete.

And this fairest in meane fayre were,
That with hir trallie hir fortune the my reke:
Begs the like bonie:
Of hir Greene-mother, making monie,
Annope the prime Prince Grace,
They end broad theur uniuers Colomes:
To keke new Cities, for new habiteres:
The heret owne limes canuecheire,
When to increasid is this prudente Nation,
and Orl thyas sayc, With o ther Princes hit In fantaes are.

one commands this people loyall, the secret Marpese with plenty blis of issue ro- all: An- ti- pe
wacker sex (so great in field) No power of the mightest Males can make to yeld: They living aye
Hexa- gonis no Be-zi- lell, for curios Art may passe, or imitate, One Souraign and but
Amazons excels the rest, That on this earthie Sphare haue ever bin, Vwhose lit- le hearts in
They wook in common ferche common wcale: Their labours reflesse to maintaine their race: Their
s of all nations the Monarchie is best, So of all Monarchies that Fe- mi- nine, Of
They wook in common for the common vyeale: Their labour's reflesse to maintaine their race: Their
famous Amazons excels the rest, That on this earthie Sphare haue ever bin, Vwhose lit- le hearts in
Hexa- gonis no Be-zi- lell, for curios Art may passe, or imitate, One Souraign and but
wacker sex (so great in field) No power of the mightest Males can make to yeld: They living aye,
one commands this people loyall, the great Marpese with plenty blis of issue ro- all: An- ti- pe.

A S of all states the Monarchie is best, So of all Monarchies that Fe- mi- nine, Of
They wook in common for the common vyeale: Their labour's reflesse to maintaine their race: Their
famous Amazons excels the rest, That on this earthie Sphare haue ever bin, Vwhose lit- le hearts in
Hexa- gonis no Be-zi- lell, for curios Art may passe, or imitate, One Souraign and but
wacker sex (so great in field) No power of the mightest Males can make to yeld: They living aye,
one commands this people loyall, the great Marpese with plenty blis of issue ro- all: An- ti- pe.

most sober and most chaste, Their paine-got goods in pleasure scorne to waste,
and Orl thyas faise, With o ther Princes hit In- fantaes are.

II To whose graue accents hit Princely Grace
Vouchsafe with Trine Ape& reply to make,
To sweetest Treble tuning sweeter Base;
Hir mournfull suit a ioyfull end doth take:
And then, when fit time they espy,
Some thoufands strong
This Armie roall gallantly
Doth march along.

Harke, harke, me thinkes I heare in Notes of choice,
This fairest Ladies sweetest mournfull voice.

Along vnto their tellling place,
 Who come, where Maids the Morice dance
 Thus walding their Prince in and out the ytreace:
 Where, readmng the Hey, right nimbly they plaine,
 (This wach-word part) a broad de hie:
 The vllg, when occasion fentes,


C. CONTRATTNO.

MEANE.

B. Ut all this while shee doth chant it alone, Most humbly beggyngh in hir Do-rik straines,
 His Mothers silence makes her much to doubt, His Grace vnto hir vwill this grace denie:

Of hir deare Lige leane to be gone, But comfort none she yet obtaines,
 But still hir suite shee doth hold out, In hope at last to mons partie.

Importunate Orithya now hath wonne
 His stern Queene-Mothers grant to hir desire:
 For Ioy, hir Sisters all as one
 With chearefull tones fill vp the Quire.
 These Ladies Musciall Confort assyres
 The Prince hir much-desired Sou'raigntie:

The

The Prince hath much-deferred Sou'reignities;
These Ladies Muscall Comorts allures.
With chearefull tones all vp the Que're.
For Joy, his Sisters all as one
Hir Ayme Queene-Motheres graunt to hit desire:
Hir Ayme Queene-Motheres graunt to hit desire:
Importunat Othrya now hatha wonne.

Song : repeating in either the two last Straines.

Sing this to the second Tune : and then end with the first verse of the first

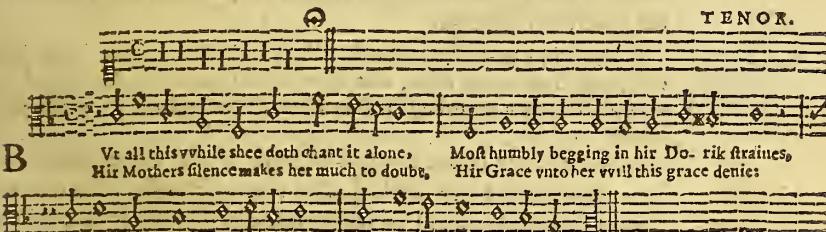


Out still her suit shee doth hold out, In hope at last to moue pittie.
Of biderare Liege leue to be gone: But comfort none shee gett obtructes.

Hir Mothers silencie maketh her much to dolde, Hir Grace can to her will this Grace denie.

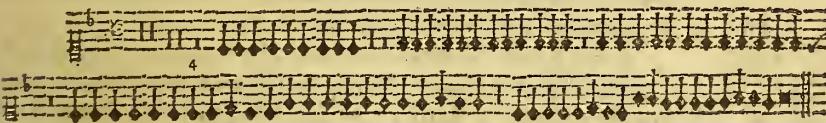


BASSVS.



B Vt all this vvhile shee doth chant it alone, Most humbly begging in hir Do- rik straines,
Hir Mothers silencie makes her much to doubt, Hir Grace unto her wyl this grace denie;

Of hir deare Liege leue to be gone: But comfort noneshee yet obtaines.
But still her suit shee doth hold out, In hope at last to moue pittie.



Sing this to the second Tune : and then end with the first verse of the first
Song : repeating in either the two last Straines.

The vulgar, when occas'on serues,
(This watch-word past) abroad doe hie.
Where treading the Hey, right nimly they prance,
Thus waiting their Prince in and out they trace :
Who come, these Maids the Morice dance,
Along unto their resting-place.

33.
Before swarming
the voices come
downe to the
stoole.

34.
The manner of
their swarming.

In the morning before the swarne come abroad, these Ladies come downe neerer the stoole: and there they hold on their melodie somewhat longer, singing sometime aboue twentie notes together, and with shorter pauses.

At the very swarming-time they descend to the stoole: where answering one another in more earnest manner, with thicker & shriller notes, the maine begins to march along; stronging one another for haste, and buzzing with their wings in great iolitie.

As soone as these gallant Nymphs are aloft, they doe most nimblly besfirre themselues, sporting and playing in and out as if they were dancing the Hey; in this manner waiting for the comming of their Prince. Now when some two third parts or three fourth parts of the swarne is passed, the Musick ceaseth, and * then commeth forth this stately Dame *Orithya*: who walking a turne or two before the doore (of purpose, you would thinke, to be seene) she takes hir leaue, leauing but a small traine to follow her, which high them after as fast as they can.

* Sometime when ill weather hath kept in the swarne ouer long, shee will come forth before them, as it were checking their slacknesse and timiditie: but then returning in, she commeth forth afterward in hir due place.

This decent order the great Lords of the earth seeme to haue learned of this little Ladie: who in their Country-progreſſes, goings to Parliament, and other ſolemne proceſſions, doe ſend the greatest and faireſt part of their retinew before them, hauing behinde but a ſmall troope of neceſſarie attendants, to guard their persons.

If the prime swarne be broken, the ſecond will both call, and swarne the ſooner; it may be the next day: and by that occaſion haply a third alſo may arife, yea and ſometime a fourth.

But all within a fortnight after the prime swarne.

Except in ſome extraordinařie plentifull yeařes both for Breed and Honie. Such as was 1616: wherein not onely many swarines did swarne as old stockes; but alſo old stockes hauing betimes swarne twice, about ſix weekeſ after began to swarne a fresh, as in an other yeaře: and ſo had, in effect, two Summers in one.

35.
The prime
swarne being
broken, ſhe next
may call and
swarne within
the eighth day

36.
All the swarneſ
of one houre come
within a fort-
night.

After

After the second swarne, I haue heard a young Ladie-bee call: but the Queene, not willing to part with any more of hir companie, did not answer: and the next day she with seuen more were brought forth dead, v.

V. c. 1. n. 7.

Sometime thought the Queene giue consent to a third or fourth, the Bees seeing the stock little enough to liue, shew themselves loth to goe: and then also there is no way with her, but one.

When the swarne is vp, and busie in their dance, v: it is a common vse, for want of other Musick, to play them a fit of mirth with a Pan, Kettle, Bason, Candlestick, or other like Instrument, so to stay them, forsooth, from flying away. Indeed where other Bee-folds are not farr off, this vse hath a good vse: for thereby the place and time of their rising is publiquely notisified, and so a iust and open claime laid vnto the Swarne, that otherwise some false neighbour might challenge for his: which vndoubtedly was the originall cause of this custome. But the pretended reason is to me a meere fancie: although I know it to bee as ancient as common. For Claudian long agoe could say,

— *Cybeleia quassans*
Hiblans procul a senex revocare fugaces
Tinnitu conatur apes. —

And before him Virgil,

Hinc ubi jam-emissum cave is ad sidera cœli
Nare per cœstamen liquidam suspexeris agmen, &c.
Tinnitusque cœle, & matris quate cymbala circum:
Ipse confident medicatis sedibus, ipse
Intima more suo se se in cunabula condent.

And before him old Aristotle,

Gaudere etiam planus, & sonitus apes videntur. Quapropter tinnitu aris aut fictilis convocari eas in alveum aiant.

If you see them begin to flie aloft (which is a token they would be gone) cast dust among them to make them come downe. If they will not be stayed, but, hasting on still, goe beyond your bounds; the ancient Law of Christendome

37.
*What vse there is
of tinging the
swarne.*

V. n. 34. My wif vses this reason to
the note of Queen Bee being descended, &
v. note of Pans, & other Bees through
incidents & uncertainty, fly in small
troups to some bough or other place, —
whether Queen Bee some following,
the tell gather together as opportunity
the swarne setteth. It may also
serve to give the Bees notice now
they are to therefore not to let it
surge as followe the Bees from their
place, do alwaies my selfe from ab
settle them, for they may reme-
mber that they are but where they
doe, confola- began to swarne
tu Honori, being so neare the
moche not began at some.

Georg. 4.

38.
*What to doe if
the swarne be
wayward.*

Of the Swarming of Bees,

permitteth you to pursue them whithersoever, for the recouerie of your owne.

Fugientes perseguiri possum in fundum alienum vel invito Domino ac verante, Lege Thesaurus § ad exhibendum. Quia ius cuique acquisitum ei conservari debet. Lege Patre. § de ijs qui sunt. Seus si apes feras novè in alieno prædio captarem. § Apium, in fine de rerum divisione.

But sometime they flye so fast and so farre before they pitch, that though you follow them neuer so fast, you must be content to leaue them, happily to the happy finder. For when you haue lost the sight and hearing of them, you haue lost al right and propertie in them.

Examen quod eos alio tuo exclarerit, consiq; intelligitur esse tuum, donec in conspectu tuo est, nec difficilis persecutio ejus est: alsoquin occupantis est. Iustinian. l.2. institutionem juris. tit. de rerum divisione.

39.
Some swarmes
provide them
houses afore-
hand.

40.
And then they
fly away direct-
ly to the place.

Sometime they will be prouided of a house before they swarme, which some Harbingers haue found and viewed, and dressed against their comming: as either a hollow tree, or a void Hiue: and then will they away presently, and by no meanes settle till they come thither. Vnto which place they will flic, not, as at other times; vncertainly this way and that way; but as directely as they can guesse.

A poore Woman hauing taken a poore swarne to keepe for halfe, by New-yeares-tide lost hit owne part and hit Partners: and being carelesse of the Hiue when the Bees were dead, she let it stand abroad till she had forgotten it: The next Summer comming into hit Garden, she found some Bees passing to and fro hit Hiue, which were then busie in cleansing and dressing it: shee wisely fearing that the Bees came to carrie away the Wax that was leaft, bade hit Daughter take the Hiue and carrie it in. The Wench following hit play did happily forget hit mothers command: and by that meanes the Hiue stood still, till the vnxpected swarne came, that afterward stored hit garden. It is not amisse therefore to follow the counsell of Columella: *Oportet autem vacua domicilia collocata in aparijs habere. Nam sunt nonnulla examina que cum processerint, statim sedem sibi querant in proximo, (Seu potius prius quæstam, lustratam, & paratam ad eant. v.n.39.) eandemq; occupent quam vacuan repererint.*

Columella

41.
Vacua alvearia
sunt semper pa-
rata in Apiaris.

Wher

VVhen your swarne hath made choice of a lighting place, you shall quickly see it knit together in forme (if nothing let) of a *Cone, Pine-aple, or cluster of grapes. As soone as it is settled, or at least as soone after as may be, hiuue them. For the longer they hang, the lother they are to be put from the place, the more time they lose from their worke, and the more in danger are they to be gone, either home againe, or quite away. For when they are once settled, they presently send forth spies, to search out an abiding place: who if they returne with good newes before swarming-time be past that day, they rise presently, and are gone: otherwise they will stay till swarming-time the next day. But when soever the spies haue sped, they returne with all speed, and no sooner doe they touch the Cone or Cluster, but they begin to shake their wings like as the Bees doe that are chilled: which the next perceiuing doe the like: and so doth this soft shiuering passe as a watch-word from one to another, vntill it come to the inmost Bees: whereby is caused a great hollownesse in the Cone. When you see them doe thus, then may you bid them farewell: for presently they begin to vnknot, and to be gone. And then though you Hiuue them neuer so well, they will not abide.

When you see your swarne, first choose out a fit hiuue, neither too big nor too little, but proportionable to the quantitie and time of the swarne: so that the Bees may fill it that yeere, or at the least within a handfull, which they may make vp the next yeere in good time.

A swarne before *Mid-gemini*, put into a Hiuue that conteineth twice so much as the *swarne is: a swarm at *Cancer*, into a Hiuue that conteineth so much, and halfe so much: and for a swarne at *Mid-cancer*, a Hiuue, that will hold it or little more, may suffice. The rest betweene these let be fitted in like proportion vnto these.

For example, a swarne of three gawns, or a +good Prime-swarne before *Mid-Gemini*, will aske a Hiuue of three pecks: such a one at *Cancer*, a Hiuue of five gawnes. Likewise a double-prime swarne comming betime, is fitted with a bushell-Hiuue: and all pecke-swarmes, and other single swarmes

42.
The Huing of Bees.

43.
When they are to be hiuued.

* A Cone is a round Pyramis. *Figura rotunda ex lato in acutis definens: and therefore is a Pine-aple, of his figure, called Conus.*

44.
The token of their flying away after they be settled.

45.
How to fit the Hunes to the swarmes.

*May
June*

permitteth you to pursue them whithersoeuer, for the recoverie of your owne.

Fugientes persequi possum in fundum alienum vel invito Dowino ac verante. Lege Thesaurus § ad exhibendum. Quia ius cuique acquisitum ei conservari debet. Lege Patre. § de ijs qui sunt. Seus si apes feras novè in alieno prædio caparem. § Apium, in fine de rerum divisione.

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Columella

41.
*Vacua alvearia
sunt semper pa-
rata in Apario.*

When

and the Hiving of them.

C. 5.

42.
The Hiving of
Bees.43.
When they are to
be hived.* A Cone is a
round Pyramis.
Figura rotunda
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Pine-aple, of
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led *Conus*.44.
The token of
their flying away
after they be set-
led.45.
How to fit the
Hives to the
swarmes.May
June

When your swarne hath made choice of a lighting place, you shall quickly see it knit together in forme (if nothing let) of a *Cone, Pine-aple, or cluster of grapes. As soone as it is settled, or at least as soone after as may be, hive them. For the longer they hang, the lother they are to be put from the place, the more time they lose from their worke, and the more in danger are they to be gone, either home againe, or quite away. For when they are once settled, they presently send forth spies, to search out an abiding place: who if they returne with good newes before swarming-time be past that day, they rise presently, and are gone: otherwise they will stay till swarming-time the next day. But whensoeuer the spies haue sped, they returne with all speed, and no sooner doe they touch the Cone or Cluster, but they begin to shake their wings like as the Bees doe that are chilled: which the next perceiuing doe the like: and so doth this soft shiuering passe as a watch-word from one to another, vntill it come to the inmost Bees: whereby is caused a great hollownesse in the Cone. When you see them doe thus, then may you bid them farewell: for presently they begin to vnknit, and to be gone. And then though you Hiue them neuer so well, they will not abide.

When you see your swarne, first choose out a fit hive, neither too big nor too little, but proportionable to the quantitie and time of the swarne: so that the Bees may fill it that yeere, or at the least within a handfull, which they may make vp the next yeere in good time.

A swarne before *Mid-gemini*, put into a Hive that containeth twice so much as the *swarne is: a swarne at *Cancer*, into a Hive that containeth so much, and halfe so much: and for a swarne at *Mid-cancer*, a Hive that will hold it or little more, may suffice. The rest betweene these let be fitted in like proportion vnto these.

For example, a swarne of three gawns, or a +good Prime-swarne before *Mid-Gemini*, will aske a Hive of three pecks: such a one at *Cancer*, a Hive of five gawnes. Likewise a double-prime-swarne comming betime, is fitted with a bushell-Hive: and all pecke-swarmes, and other single swarmes

V.6. 3. n.6.
V. n. 67. & 68.swarmes after *Mid-Cancer*, with the least, or halfe-bushell-hiue. *v.* But little and late swarmes are rather to be vnited. *v.*

* The aire being sultry-hot, causeth the swarne to hang hollow; and so to seeme greater than he is.

† The goodnesse or greatnesse of a swarne you may most certainelie know by the weight: it being a good one that weigheth five pound, a reasonable good one that weigheth four, and a very good one that weigheth six. Heereby also it will not be difficult, which seemeth impossible, to know what number of Bees is in a swarne; if you know first that 4480. is a pound, because 280. weigheth one ounce, as 35. one dragme. So that two good swarmes vnited weighing 10. or 11. pound, doe conteine betweene 40. and 50. M, the number of a *Campe-Royall*: which company cannot wel be larger vnder one Leader, in the largest Hiue. *v. c.3. n.6.* Of such a number did *Alexanders* victorious Army consist. For *Diod. Sic. l.17.* reckoneth vp some 48. M. with those 13500. least behinde with *Antipater*. And *Justin. l.9.* not mentioning this company, numbreth 36500. which number is also great enough for a very faire swarne; as containing the quantity of two reasonable swarmes vnited: there being also few single swarms so good, as to amount to 30000.

The weight of any swarne is to be knowne when the Bees are newly hewed, and the number in any weight when they are newly taken.

If this iust proportion be not precisely kept, the Bees may doe well enough in a middle-sized hiue: for being vnder-hewed, they will cast somewhat the sooner, though peradventure the lesse swarne; and being but a little ouer-hewed, though they spend some time in supplying the former yeeres defects, they may yet swarne in good time, and the fairer swarne. And indeed all swarmes, whether bigger or lesse, by decreasing or increasing, doe naturally draw towards this quantity.

But if the disproportion be much, it must be amended; whether you spy your error the same day, or afterward.

If the same day, your remedy is to knocke out the Bees vpon the mantle betweene two single Rests, and to set a fitter Hiue ouer them: but this is not to be done before the swarming-houres be past, lest some of the Bees take a misse, and goe home againe. Otherwise you may set the Hiue in a Brake, *v.* with his bottome vpward, and the fitter Hiue vpon.

If afterward you see by the Bees lying out, that they are vnder-

nder-hiued, your remedy is to rearre the Hiue with a skirt, or Bolsters, as much as will let them in. If at *Virgo* you see, by their not filling the Hiue, that they are ouer-hiued; your remedie is then to cut off the skirt vnto the combes, or neare to them.

But generally it is safer and more for your profit, to vnder-hiue a swarne, then to ouer-hiue him.

Your Hiue being fittred and dressed, v. you must haue also in a readinelle a Mantle, a Rest, and a Brush.

The Mantle may be a sheet, or halfe-sheet, or other linnen cloth, an ell square at the least.

A Rest is either single or double. The single Rest is a *Prisme* or three square *Columne*, eightene iaches long, and three inches deepe, hauing the vpper edge full of nicks for the space of six inches at each end, and the middle space, of six inches, smooth. It will be safer for the Bees, and lighter for cariage, if the length of tenne inches in the middle of the bottome be cut away one inch high, abating the new edges; and the fourre inches at each end be hollowed in the middle of the bottome from end to end, at the same height of one inch: and so this will be the forme of the side,



And this of the end.

It is most fitlie made of a quarter of a young tree.



Vpon shelving or hanging ground, one single Rest may serue: but if the ground be somewhat leuell, it is better to vse two: because the Hiue-skirt is set down vpon them with lesse danger to the Bees, then vpon the ground or other flat thing. And these two Rests are to be placed with the vpper edges about nine inches apart: so that the Hiue standing vpon them, may hang out ouer them some two or three inches.

46.
Better to vnder-
hiue a stall then
to ouer-hiue him.

V.C. 3. n. 8.

47.
Three things re-
quisite to hiving.

48.
The Mantle.

49.
The single Rest.

V. n. 45. 56. 69.
V. n. 57.

⁵⁰
The double Rest.

In some cases two single Rests are most conuenient, v. but in most the double: v. which is also lighter for carriage, and more ready for vse.

The double Rest consisteth of two parts or sides, an inch thicke, of the same length and depth with the single Rest, having such vpper edges so nickt at both ends, and the lower edges smooth, with ten inches of the middle cut away halfe an inch high, and then made sharpe againe: which two sides are to be fastned one to another, at the iust distance of nine inches from edge to edge, with two Rounds or Braces tennanted into them three or foure inches from the ends. These sides are firsly made of inch-board, or of a cleaft Lug of Withie or other wood.

^{51:}
The Brush.

The Brush is a handfull of Rosemary, Hyssop, Fennell, or other herbes; of Hazell, Withie, Plum-tree, or other boughs; or rather of boughes with hearbs, bound taper-wise together.

^{52:}
What the Hiuer
must doe.

V. c. I. n. 27.

V. c. I. n. 40.

All things necessary thus prepared, let the Hiuer, which must weare no offensiuе apparell, v. first drinke of the best beere, and wet his hands and face therewith: and then let him goe about his businesse soberly and gently, taking good heed where hee sets his foot, and how hee handleth them: for if he tread vpon a Bee, or by any other meanes crush one of them; they presently finding it, by the ranke smell of the poysonous humor, will be so angry; that he shall haue worke enough to defend himselfe, vndeſte hee haue on his complete harnessse: v. and being thus disquieted they wil be the worse to hiue. Moreouer, the troubling of them doth oft times make them rise and goe home againe: sometime it breaketh the swarne, causing part to returne, whereby the rest are dis-couraged, being leaſt vnsufficient: yea sometime it disperseth and spoyleth the whole swarne: it may be also the death of the Queene: and then they will not continue to the next Summer, howſoever prouided. And experience hath taught me, that few swarmes much troubled in the hiuing do proſper. And therefore in any case Hiu them as quietly, and with as little businelle as you may.

^{53.}
The manner of
Hiuing.

The manner of hiuing is ſo manifold, by reaſon of the many

and the *Hiving* of them.

C.5.

many & different circumstances of the lighting or pitching places, that it can hardly be taught by precepts; but is rather to be learned by vse and experience, guided with reason and discretion. Neuertheleſe for the helpe of novices, I will set downe ſome ſpeciall direcions, which he that marketh, may readily hieue a ſwarme in moſt lighting places: and a little praetice will fit him for any.

First therefore note that a ſwarme is to be hieued by 1. ſhaking, or 2. cutting the bough whereon it hangeth; or by 3. wiping the Bees down, or 4. driueng them vp into the *Hiue*.

If your ſwarme light vpon a bough; first ſpread the Mantle vnder it, and lay the Rest or Rests in the middle thereof, with the ends toward two corners of the Mantle.

Then if the ſwarme be ſo high, that you or ſome assistant may conueniently put the *Hiue* vnder it; hauing first remoued the twigs round about, that ſtand in your way, ſhake the Bees into the *Hiue*: and when you haue ſet the *Hiue* right vpon the Rests, take vp the two corners of the Mantle at the ends of the Rests, and pinne them together vpon the top of the *Hiue*, to ſtay the Bees running out ſodainely: and then returning to the bough, ſhake it againe, and turne it aside out of his place, or couer it with your body, or with ſome cloth: and then preſently loſe the corners of the Mantle, and ſpread them againe. When they begin to ceaſe running into the *Hiue*, if you ſee them lie thiſſe vpon the Mantle, ſhake them to the *Hiue*-ſkirts: and the reſt, as well vpon the *Hiue* as the Mantle, driue in gently with your Brush. So ſhall you eaſily and quietly *Hiue* them. Otherwife hauing first taken away the twigs that may let you, cut off the bough or boughes (for ſometime they wil hang vpon many): and if you doubt that ſome of them may fall in the cutting, let another ſecond you with the ready *Hiue*, holding it di-rectly vnder them. The bough being cut, lay the *Cone* be-tweene two ſingle Rests, and ſet the *Hiue* ouer them. Or elſe put the *Cone* first in the *Hiue*, and then ſet the *Hiue* downe vpon the Rests.

But if they hang ſo neere the ground, that you cannot conueniently put the *Hiue* vnder them; then placing the

54.
Four meaneſ
of Hiving a
Swarme.

55.
How to Hive a
Swarme that
lighteth vpon a
bough.

56.
Either high.

57.

Or low.

Mantle and Rests right vnder, shake them downe : and setting the Hiue ouer them vpon the Rests, take vp the two corners of the Mantle, and doe as before.

And in case some of the swarne be first fallen to the ground, whence they make no haste to rise againe; then, placing a double Rest without a Mantle as well as you may, not killing any Bees, either shake the rest downe to them, and so set the Hiue ouer them all; or else set the Hiue ouer that part, and the rest, hauing cut the bough, lay beside the Hiue, and moue them with your Brush.

38.
How if it light
vpon a high tree.

If they pitch vpon a high tree, it is not best to shake them into the Hiue, but rather with a sharpe knife cut the bough if you can conveniently : and either put it into the Hiue, and couer it with a Mantle, or bring it downe gentle in your hand. But if you want a ladder or other meanes to bring it downe, then let it downe by a cord tied to some crooke of the bough.

39.
How if vpon the
body of a tree.

If they pitch vpon the body of a tree, or vpon some great swarne; then set one side of the Hiue right ouer the Bees, and with the Brush drive them vp by mouing still the llower and wayward part. But if you haue no meanes to fasten the Hiue by tying it aboue, or propping it beneath with prongs or the like, or if they be unwilling thus to take the Hiue; then parting them from the tree with a tight v. thred, wipe them downe into the hiue, and set them vpon the Mantle & Rest vnder the tree. If they be so high that you must clime for them, then couer them presently with a Mantle, and so carry them downe. But looke that many will rise againe: which let alone yntill they be knit, and then sweepe them likewise into another leere Hiue, and put them to their fellowes. If yet some of them will vp againe, you must not cease to trouble them, by wiping them off gently with your Brush, by laying on Mug-wort, Margerom, Wormewood, Archangell, or other Weeds, or Hearbs, or by couering the place with a cloth: and after a while they will all to their fellowes in the Hiue.

7. n. 23.

* White Nettle.

But if they be so neere the ground, that you cannot conveniently put the Hiue vnder them; then with a tight thred sweep

sweep them downe vpon the ground ; hauing first layed the Rest either with or without the Mantle, and set the Hiue ouer them.

And if they be of that distance from the ground, that you may set a stoole close vnder them ; then make fast one side of the Mantle vnto the tree, close vnder the Bees, and the rest of the Mantle lay vpon the stoole with the Rest : then hauing sodainly sweeped downe the Bees vpon the Mantle, set the hiue ouer them : and presently looing that side of the Mantle from the tree, lay it ouer the Bees close to the Hiue.

If they light on the top of a stub, pollard, dead hedge, or the like, set one side of the Hiue ouer them, propping the other side with a prong or two, and driue them vp as before.

If they light in the middle or bottome of a dead hedge, your best way is softly to vnworke the hedge till you come to them : otherwise you must violently knocke the hedge on the other side, so forcing the Bees into the Hiue : and then setting them downe, trouble the place as before. But then be sure to be troubled your selfe: for it is hard so to get them from such a hold.

If they light on some hollow side of a stub, or tree, which they will be loth to leave ; beware in any case you wet them not : for that doth not onely drowne many, but also maketh the rest more eagerly keepe the place: because some through the wet cannot flieaway, and their fellowes finding them there will still resort vnto them. But when you haue moued them by other meanes as much as you may, put some morter or cloome into the hollow place, mouing it forward by little and little, so that you burie none of the Bees, vntill you haue spread it ouer the place: and then will they for sake that, and take some other part of the tree or stub, where you may more easily hive them.

When they flie into a hollow tree, so that by none of the foresaid meanes you can hive them, then must you remoue them by some offensive smoake, and make them chuse a new lighting place : which is thus to be done. If the Bees lye aboue the hole where they went in (as they will doe if they may) then boare a hole aboue them : if beneath, beneath

60.

How if it light
upon the top of
any thing.

61.

How if it light
in the middle of a
dead hedge.

62

How if it light
on some hollow
side of a stub, or
tree.

63.

How if it flie in
to a hollow tree.

them : but bee sure that the vpper hole bee wide enough : rather then faile make two or three with a two-inch auger, or, with a hatchet, one as great. Then fire a piece of Match, or for want of Match, take a little Hay, or other thing that will smoake moderately, and not flame ; and put it into the tree bencath them : and you shall see them fly forth aboue for life, and presently pitch in some place where you may huie them. But this is to be done the same or the next day at the farthest : for afterward they will abide the smother, and rather lose their liues then leauetheir goods.

64.
How if a light
vpon another
hiue.

65.
The swarne is
alwaies to bee
kept together,
lest the Bees kill
one another.

66
The swarne to be
set neere the
lighting-place.

If a swarne by reason of the coldnesse of the aire, and roughnesse of the wind being not able to get away, do offer to light vpon any other Hiue ; quickly couer the Hiue close with a Mante, lest the Bees entring be pitifullly murdered.

But in all manner hiuings this one rule is generall. The swarne must bee continually kept together : for if at that time part remaine from the company but the space of halfe an houre or lesse ; afterward when they finde them, and would returne vnto them, they are vsed as Strangers and Robbers : as fast as they come they are beaten and killed. And those that escaping thence goe backe to their old home, finde no better entertainment : and those few that escape thence, desperatly runne into any other Hiues, and so leape out of the Frying-pan into the fire. And therefore when the swarne is huied, if you see part begin to gather together by them-selues, remoue them as speedily as you can, that they may goe to their fellowes in time.

And alwaies if you may chuse, set the swarne in the morning Sunne, and as neere the lighting-place as may be : which if some inconuenience will not suffer you to doe, yet set it within the length of a Pearch, or at the least within sight and hearing : and then (lest those which are least at the lighting place, by losing their company a while, lose their liues also) first trouble them by the meanes mentioned n. 59. and then cause some of the huied part to arise by shaking them off the bough, and by wiping them downe that are on the out-side of the Hiue. Which, when they are vp, will make such a noise, that their fellowes may easily finde them. And if

if any yet hankering behinde chance to be set vpon when they come to the Hiue ; be-sprinkle the Mantle, the Hiue, and the Bees with a little strong drinke, and you shall parte the fray.

And if any man maruaile why they of the same swarwe should so soone be strange one to an other, seeing that Bees of one Hiue being pent a whole day in an other, are yet welcome to their fellowes at the last ; I can giue no other reason but this, that they knowing a swarwe may parte, and so each parte become a feuerall company, they deeme these to be such by their long absence. And if you aske why they should finde so hard entertainment in their old home from whence they came, it is because they went away with a Leader of their owne, and so became a feuerall company. And therefore if she bide away, as many as come backe, (vnlesle they come presently) are vsed as strangers : but if parte haue brought hir home againe, the rest doe safely returne afterward, either that euening, or the next morrow.

If the swarwe parte, as sometime it will, and settle in diuers places so neere that they may see each other ; let the greatest parte alone, specially if it bee best to hiue, and trouble the other in the setling with shaking, gentle rubbing with weeds, and spitting and blowing in the place, that they may goe to their fellowes. If they bee setled and hang vpon a bough, cut the bough and bring them to them. If they bee setled in some other place, then put them in a hiue without Spleers : and if they be within a pearch of the other parte, moue them both, one towards an other by little and little till they be close together. After they haue stood so about halfe an houte, list vp the vspsleeted hiue from his Mantle and Rest, and shake the Bees out of the vnsleeted hiue vpon the same : you may first knocke the hiue downe, and then presently clap it twice or thrice betweene your hands. This done, sprinkle both parts with good drinke, and then without any stay set the sleeted hiue ouer them, and they will straight way vp into it. But lay the vnsleeted hiue along hard by, not where it stood, but on the other side : and those that remaine in it will follow their fellowes. But if the parts

67.
*What to doe if a
swarwe parte.*

be

be farther a-part then a Pearch ; then put them together the same night, as if they were two swarmes. v. n. 69.

In like manner, when you haue little swarmes vnder the quantitie of a Pecke, specially after Cancer is well entred; put two or three of * them together, whether they rise in the same day, or in diuers.

* After this time, the chiefe breeding being past, the swarmes desire most to vnite themselves, that thereby they may make their company sufficient : which by breeding they haue not time to doe.

68.
*Uniting of
swarmes is profi-
table.*

For being thus vnited they will labour cheerfully, gather store of wealth, and stoutly defend themselves against all enemies : whereas if they were kept asunder, they would surely perish the next robbing-time, or winter ; or living would doe you little good. And therefore if two swarmes rising at the same time do weld and knit together ; (as lightly they will doe, if they be within hearing one of an other) neuer trouble your selfe to part them, nor be sorrie for the chance. For those two being all one, are better then three such that are alone. Indeed sometime it falleth out, that they fall out, and fight at the first : but that is because they are yet diuers companies vnder diuers Commanders. For so soone as the inferior being taken away, there remaineth one supreme Monarch ouer all ; the strife presently ceaseth, and they are thence-forth linked in perpetuall peace and vnitie together. Wherefore they are little acquainted with the nature of these politike creatures, that fetch their similitudes from them, to crosse that Rich, Mightie, Renowmed, thrice happy V N I O N, vnder one Prudent, Potent, Peacesfull, thrice Noble Soueraigne.

69.
*The manner of
vniting.*

The way to vnite two swarmes is this. In the euening some two or three hours after Sunne-set, or when it waxeth darke, hauing spread a Mantle on the ground, neere vnto the stoole, where this vnited swarne shall stand, and set a paire, of Rests in the middle of it ; knock downe the Remouer vp on the Rests, and then lifting vp the Hiue a little, and clapping it betweene your hands to get out the Bees that sticke in it, lay it downe on his side warily by the Bees, and set the

Receiner

Receiuer vpon the Rests ouer them : and they will begin presently to ascend. If those that remaine doe not runne out to their company, of their owne accord ; clap the place where they be gathered, and force them out : and lay downe the hiue againe so, that the small remnant may follow their fellowes : if you spy any clustering by themselues, or stragling from the Rests, guide them thither. And when they are all in, either that night, or betimes in the morning, cloome the Hiue vnto his stoole.

Otherwise about ten a clocke, or as soone as it is darke, set the Remouer in a Brake v. with his bottome vpward, and the Receiuer vpon him, binding them about the skirts with a long Towell or two Napkins sowed or pinned together, and so let them stand till the morning : and then set the Receiuer vpon his stoole. After this manner I vnted two swarmes without the death of any one Bee, sauing onely her that must not be sauied.

If yet there be not Bees enough in the Hiue, you may in like manner put another swarne to them.

In the vniting of swarmes, two speciaill inconueniences are to be auoided. The one that being vnted, they exceed not the naturall quantitie of a swarne : v. for if they doe, though they agree and gather, and grow fat, yea and cast the next yeare a faire swarne ; yet will they neuer come to their first quantitie againe, nor scarce swarne any more in that vast roome. The other that they fight nor, and destroy one an other. Vnto which two inconueniences the swarmes that vnite themselues, if they be not aided, are obnoxious. To preuent the fruitlesse concourse of more then need is, which is the first inconuenience, when you see a sufficient faire swarne abroad, haue an eye vnto the rest of your stockes : if you espie an other about to rise, stay him by present shutting the doore with a Napkin, Apron, or other such cloth, vntill the first swarne be setled : if then one rising draw neere vnto him (as lightly he will doe if he can finde him) couer him quickly with a Mantle till that be setled : if being now hiued, an other prese into him ; then before many be entred, (that you may be sure not to haue the Queene)

70.
Another way.
V. n. 24.

71.
Two speciaill inconueniences to be auoided in this worke.

72.
1. Superfluous multitude.

V. c. 3. n. 6.

73.
2. Ciuitall warre.

74.
To preuent the first.

carrie away the Hiue with the swarne about two pearches off : and set a leere prepared Hiue in his place for that other swarne.

If none of these things bee done, but that swarmes doe runne together in greater quantitie than a good Hiue can conteine ; then reare the Hiue with bolsters high enough to let them all in : which, when they haue once swarmed, the ^{*} next Vindemie take away thus.

* If you doe it in Winter, see the Bees be not chilled.

In a faire afternoone, about foure a clocke, picke away all the cloome betweene the hiue and the stoole : and in the morning, at the breake of the day, lay the Hiue along with the edges of the Combis vp and downe, vpon a Mantle spread on the ground : and there pare off the Combis ends euen with the skirts, and so set him againe on the Stoole vpon moueable v: Doore-posts, and a thin bolster behinde : and presently cloome vp the Hiue as close as may be.

V. c. 3. n. 29.

75

To prevente the
second.

Concerning the other inconuenience, know this, that though two strange swarmes, with their feuerall Queenes, doe neuer meet in one Hiue without discontent ; (which they expresse by running to and fro without, and making a tumultuous noise within : from which they sometime fall to fighting and killing) yet commonly this strife is soone at an end. For the first Queene hauing gotten the right of the whole Roome by the possession of the Capitol or Superior part, where she sitteth safe with her Guard about her ; the Inferior by a common consent, is straight-way dispatched : and so they become all fellowes and friends vnder one Soueraigne. And therefore when swarmes are united by you, be sure that the Bees in the *Receiver* be not throwne downe among the other, lesle the Superior Queene come downe with them, and so you make more strife than needs.

76.
When most dan-
ger is.

But the danger is when two Princes with their equall Colonies happen to be equally aduanced in the Hiue : and therefore neither yeeldeth to other, but fight it out on both sides with a quall hope of victorie. When this chanceth, which is very seldom, the Controuersie is doubtfull ; and the conflict like to be perillous, or rather pernicious, if it be not

not preuented. In this case you haue no other way, but the next morning, if still they fight, to cast them all out of the Hiue: and so will they either knit apart, or returne to their old stockes: from whence another time they may swarne more luckily. The six and twentith of Iune, 1621. I had two faire swarmes vp at once, which going together ouer-filled a good Hiue: where neither of them yeelding their Queenes to the other, the fight continued full two daies and two nights, euen from Thursday noone till Saturday in the afternoone: wherein such hauock was made, that the better part of these braue Souldiers (a mournfull spectacle) lay some dead, some halfe-dead sprawleng on the ground. At the last it was my hap to spie one of these Queenes at the Hiue skirts in a Cluster: which taking vp, now, quoth I to one that stood by me, heere is shee for whose sake all this slaughter was made: about an houre after my sonne found the other dead on the ground. When they had thus mercilesly murdered both the Queenes, and the better part of the swarmes; they that escaped rose all out of the Hiue, and went into another swarne which stood behinde them: of which, because they brought no Ruler with them, they were quietly receiued.

Sometime a swarne being abroad, yea knit in the *Cone*, will not abide, but returne home againe: the cause whereof is windie, wet, or cloudie weather, the not finding of a fit lighting-place, trouble in hiuing, the hot standing of the Hiue without defence, and the missing of their Prince. And this specially in a plentifull season, they being then as readie to returne vpon little or no occasion, as loth to come abroad, euen in the safest weather. *V. n. 20.* I obserued once, that the Prince being scarce ready, fell downe from the stoole vnable to recouer hir wings: whereupon the swarne returned. She being put into the Hiue, the next day the swarne rose againe and setled, but the Prince hapned to fall beside the *Cone*. The swarne being knit, missing her, began to vnknit, and be gone: which I perciuing presently hiued them: but they being still discontented, ranne vp and downe the Hiue, with a murmuringe noise both without and within. Anone

77.
A storie of a
deadly feud.

二二

78.
The causes of a
swarmes going
home again.

I had espied about a handfull of Bees hanging vpon a Nettle on the ground: among which was the Prince. When I had cut off the Nettle, and set it by the Rest vnder the Hues-kirt; presently the knot vnknotting, I saw the lost Prince with his long traine stately walking into the Hiue. As soone as shee was entred, these Male-contents began to stand still and buzz, ioysfully shaking their wings, as they wont to doe when they are pleased; and so quietly kept the Hiue. To see the suddaine alteration among them presently vpon his approach, and how they could haue notice of it all at once, as well they without, as those within, would euen make a man to wonder; but that indeed all they doe is nothing else but wonders.

79.
How to stay
them.

Swarmes that goe home, doe sometimes stay long before they rise againe: and when they rise (specially if they were hiued) they are likely to fly away: although I haue knowne a swarne to rise four times in three daies, and at the last to be quietly hiued. If therefore you perceiue the swarne returning before many be entred the old stocke, shut the doore fast: if that will not serue the turne, carrie the old stocke away stoole and all, and set the swarne presently vpon a stoole in his place.

80.
How to keepe
them from other
Hives.
V. 4. 3. n. 17.

And if any of them be going into other Hives, (as sometimes, where the Hives stand neere together or are many, some of them, specially the young Nymphs that haue not beeene abroad before, will doe; v.) couer them with Mantles: for as many as enter will die, or scape narrowly.

81.
Set not a swarne
neere an others
hiving-place.

If a swarne light neere the place where another was hived a day or two before; be sure to set it as farre as conueniently you may, from the place where the former lighted and stood: the space of a Pearch or somewhat lesse may suffice: otherwise many of the first swarne resorting thither, will to the new swarne, and so be killed.

82.
What to do when
the swarne is
new hived.

When your Bees are hiued, those that hang on the outside, drue in gently with your Brush, and lay the corners of the Mantle that are farthest from the Rest, ouer the Hiue, with boughes also to shadow it, if the weather be hot. But if you finde them vnwilling to goe in (as in extreme hot weather)

weather they will be, though they like the Hiue well enough) then striue not with them; but laying the corners of the Mantle ouer the Hiue, as before, with boughes to shade it, there suffer them till the heat be abated, and then driue them in: and if you thinke they cannot otherwise well endure that heat, couer the Hiue againe with Mantle and Boughs. And so let it stand till it wax darke, and all the Bees be come home.

Then knitting the foure corners of the Mantle together, at the top of the Hiue, and binding the Mantle about close to the middle of the hiue with a small line, carrie the swarne to his place. And after a while, taking away the Mantle, set it vpon his seat with the doore toward the South, or rather South-west: v. and then leauing onely a breathing place, for feare of stifling them, cloome it vp clofe, & put on a huckle v. and so let it stand till it be faire and warme the next day. For if the Hiue be leaft open; in the morning betimes they will resort to their former standing and there abide, sometime flying about, sometime setling on the ground: where if the cold or wet take them many dye. When you see the weather fit them, then hanging the Mantle, or other white cloth vpon the Hiue, let the go. But they will the sooner leaue the haunt of their huing-place, & fal to their work; if you shew them their new standing by knocking them out together vpon the stoole, when the weather is warme.

All swarimes, if the morrow be faire, will desire to be abroad betimes: and knowing their want, will bestirre themselves more lustily in their labour than other Bees. But if the foule weather keepe them in the first day, then are they much discouraged: so that the next day being indifferent, when other Bees worke hard, they will scarce looke out of the doore, not daring to commit their leere and thinne bodies to the could aire. And if they be quite kept in the second day also; then will they not wagge (though they dye for it) vntill the weather be very pleasant. They may liue five or six daies in the Hiue without Honie: but afterward they begin to string downe, hanging one at anothers heeles. *Pedibus connecta ad limina pendens.* Which is a certaine signe

83.
How to remoue
it in the even-
ing.

84.
How to set it on
his seat.

V. c. 2. n. 15.

V. c. 3. n. 15.
& 20. &c.

85.
How to rse it in
the morning.

86.
Foule weather
the first day
doth much dis-
courage a swarne.

87.
Foule weather
containing dath
makes it a repe
and die.

88.
A swarne may
liue six daies
without Honie.

Virg.

89.

How to prevent
the drouping and
death of a
swarme.

of death, if they be not presently relieved.

To preuent this euill, If the swarne light in your Garden within a Pearch of the Seat that is appointed for him, set it there at the first: and so will they lose no time in hankering about the hiuing-place. And if it light farther off, (whether in yourgarden or other place where they may stand safe, specially the weather being vnkinde or vncoustant) leave them there till it mend ² for those that are not remoued, but keepe still their first standing, because they are not to seeke of their way home, they feare the foule weather as little as the best. And therefore need not to be shut in in the morning, as those that are remoued: or to haue any white ouer them for their direction.

90.

How to cure a
drouping swarm.

The meanes to recover such a drouping swarne is this. The first Sunne-shinie day turne vp the Hiue to the Sunne, that his heat may reuive them: and besprinkling the sides of the Hiue, the Spleets, and the Bees also a little with Mede or Honie-water; hold them so in the heat of the Sunne till you see many of them fly abroad. Then set downe the Hiue gently vpon his Seat againe, and couer it not til it be through warme, and the Bees play cheerfully, as at other Hiues.



C H A P. VI.

Of the Bees Worke.

^{1.}
Bees most indu-
strious creatures.



Nto the industrious nature of Bees nothing is more odious than sloth and idlenesse: while there is matter to worke vpon (vnlesse they be let by vnkinde weather) their worke never ceaseth: yea the old Bees, which haue spent their daies in continual labour, will not at the last allow them-selues any immunitie or rest in their Hiues, as a recompence for

Of the Bees Worke.

97

C.6.

for their paines past, but continue still their trauaile vnto death: v. In the three still moneths indeed, *Sagittarius*, *Capricornus*, and *Aquarius*, because then there is nothing to gather, they worke not: (yet when a faire day or houre com- mether, as wearie of rest, they will abroad, imploying them- selves in diuers necessarie offices: v.) but so long as any good flowers grow, euен from *Pisces* or a little before, vnto *Sagittarius* and, some yeares, somewhat after, (which is full nine moneths) they lose no time, (*Nullus, dum per cœlum licuit, perit dies*) but follow their businelle tooth and naile. Which incellant labour while the time permitteth, with the three singular effects thereof, the (1) working of Wax, the (2) making of Honie, and the (3) feeding of their young v: the Poet in few words hath elegantly expressed all together.

*Quod superest, ubi pulsam hyemem sol aureus egit
Sub terras, cœlumq; aetiva luce reclusit;
Ille continuo saltus silvasq; peragrat,
Purpureosq; metunt flores & flumina libant
Summa leues. Hinc nescio qua dulcedine latæ
(3.) Progeniem nidosq; fovent: hinc arte recentes
Excudunt (1.) ceras: & (2.) mella tenacia fingunt.*

THeir first worke is the ground of the other two, the Artificial Cells seruing both for Coffers to lay their sweet treasure in and for nests and nurseries to breed their young in. Then after thereof they gather from flowers with their Fangs: which, being kept soft with the heat of their little bodies, of the Aire, and of their Hiues, is wrought into Comb. This worke is so nimblly and closely done, that it can hardly be perceiued: insomuch that *Aristotle* plainly confieth, *Nec vero quemadmodum operantur visum adhuc est.* But *Plinie*, willing to goe a little beyond him, telleth vna tale of a Lanthorne-hiue made at *Rome*, through which, sooth, their doings in the Hiue were disciued: and in another place of another like deuice, *Multi alvearia speculari apide ferere, ut operantes intus spectarent.* But vnlesse the Bees also were transparent as well as the Hiue, this cannot be: seeing they doe alwaies frequently compasse the Combs round

November.
1. December.
2. 3 January.

In three moneths
they cannot
worke.

V.c. 3.n. 60. 61. Pisces.

3.
All the yeares af-
ter they lose no
time.

Nat. hist. li. 11.
cap. 6.

4.
Three fruits of
Bees labour.

V.n. 53.
Virg.

5.
The first, and
ground of all,
is Wax.

6.
How Wax is ga-
thered and
wrought.

His. l. 9. c. 40.

Nat. hist. li. 11.
c. 16.

Nat. hist. li. 21.
c. 14.

Hive with C. 6.
A side-door →

Conjoined heat of Bees
and Drones hatches
the Brood.

7.

How you may see
the working of
the combes.

May

Wax softened in
the Mouths of Bees.

8.

How much wax
they bring at
once.

White Scales of Wax.

9.

The admirable
Architecture of
their combes and
cells.

Hexamer. L. 5.
c. 21.

Of the Bees Worke.

round about. A more likely way than that, were to haue a inoueable peece in one side of the Hive: which when you haue taken away, you may see the Drones and the Hony-Bees walking together to and fro, and with their doubled heat hatching their young: but their worke can you not see; though you remoue and part the Bees till the bare Combes appeare. But if your curiositie would so faine behold the manner of their curious and artificiall building, the onely way is this. In Gemini set vp a last yeeres midling swarne two or three handfulls aboue the stoole: and then when most of the Bees are abroad (but most fitly in the forenoone when they are most quiet) you may behinde the stoole behold them working on the edges of their combes: and hauing blowne their liquid and soft wax out of their mouthes (as the Waspes doe their drossie stiffe, which you may see them gather from pales with their fangs and so carry it away) to fasten and fashion it with their fangs and forefeet.

How much wax they bring at once, doth appear by the new swarmes: whose first weekes worke is spent chiefly in building combes: wherein they are so earnest, that it falleth out with them as it is in the Proverbe, *The more haste the worse speed.* For many of their burdens doe fall from them before they can fasten them to the Combes. You may then see great store of them vpon the stoole by the skirts of the hive, like vnto the white scales, which fall from young birds feathers. And therfore some haue imagined, that they also are scales which the young Bees doe likewise shed from their wings. But put you some of those parcells together with warme fingers, & you will quickly be resolued of that doubt.

The Bees combes are placed otherwise than the Waspes: for the Waspes hang theirs one vnder another, and the Bees theirs one beside another; beginning them in the top of the hive, at that distace that a Bee may reach frō one to another.

Their cells or little holes are made six square, according to the number of their feet: and of that length and widenesse, that each of them may easily containe a Bee. Which are so artificiallie wrought and ioyned together, that S. Ambrose in the consideration thereof saith, *Qua castra quadrata tantum possunt*

possunt habere artis & gratia, quantum habent crates favorum, in quibus minute ac rotunda cellula connexione sui invicem fulciuntur? Quis enim architectus eas docuit hexagonia illa cellarum indiscreta laterum aequalitate componere, ac tenues inter domorum septa ceras suspendere, stipare mella, intexta floribus horrea nectarare quodam distendere?

But heerein their Art is yet more exquisite, that whereas there are two courses of cells in the two sides of every comb; the cel-bottoms in these two sides are neuer opposite one to an other: but each hexagonal bottom of one side answereith to three third parts of the hexagonal bases of three contiguous cells on the other side, meeting all in one angle right in the centre of the opposite bottome: as in this forme:

which is so artificiall, as well for strength as beauty; that no schadon, though the thin bottome of his cell should faile, can breake through into a cell of the other side. Hec that sees this, sees he not a wonder?

Besides these ordinary combes, there is commonly one Drone-combe in a hieue, wherin the Cephens are bred, made for the nonce with wider cells. *Sunt loculi ipsi fucorum ampliores, & singuntur seorsim quoq; per se favi fucorum.* Although in some hieues part of the Drone-combes be made out with Nymph-cells. The Drone-combe being no thicker than others, and yet the Drones longer than the small Bees; they increase the length of his cells by couering them, not with a flat couer, as they doe the rest, but with a deepe hollow onc like an old wiues thrumbd cap: which afterward, when the Drones are bred, they take away. And when those cells are void of Cephens, they fill them as they doe the other with hony: yea and after swarming-time, if they want vpper cells for their hony, they will not tarry till their Cephens come forth themselues, but liking better their roome than their company, they draw them out of their seminaries before they be ripe. v.c.4. n. 31.

But the Queenes cells are built single, every one by himselfe: and that in diuers places of the Hieue, some aboue, and some beneath: that, as other princes, she may for her delight remoue at hir pleasure. But, for the most part, in the out-sides

The Drones
combe.
His. l. 9. c. 40.

The Queenes cells
are built single
in diuers places.

12.
In fashion
round.

P. c. 4. n. 18.
Nat. hist. li. 11.
c. 11.

13.
The common er-
ror anent these
celles.

14.
The combes doe
often change
their line.

Virgin wax
and ordinary.

15.
Wax is gathered
only in fourre
months.

16.
Hony the second
fruit is gathered
in 9. moneths.

P. c. 3. n. 59.

17.
Two sorts of
Hony.

of the combes: for although it be fit for Princes to be neere their chiefe Cities; yet doe they not loue to be pestered in the midst of them. In fashion they are round: which is the most perfect figure, as the six square is most fit for comely ioyning many such buildings together. They are also larger than the rest: to shew that subiects houses should not match their Soueraignes in greatness. In these Palaces do they breed their young Princes. v. Pliny speaketh thus of them: *Regias imperatoribus extruunt amplias, magnificas, separatas, tuberculo eminentes.* The common people, finding them alwaies in those stalls that die, take them for certaine signes of death, and call them pipes, or taps: and therefore when they see them in a stall that they take, they say, This was taken in good time, for it is piped: and therefore would haue stood no longer. But seeing none are without, no not the yongest swarms; ordinary reason might teach them to forgoe that fond conceit.

The Combes haue successiuely sundry colours: white, yellow, browne, blacke. Their first colour white, by the end of Summer is turned to a light yellow. Those that are taken and tried this first yeere, are called Virgin-wax, but the whiter the purer: and the rest are ordinarie. The second Summer this light yellow is changed to a sad. The third this sad yellow into a browne: which afterward, as they wax old and corrupt, altereth againe into a blackish and durtie colour: but these being tried will returne to yellow.

The time when Bees gather wax, is onely betweene *Taurus* and *Virgo*: (vnlesse *Aries* be milde and warme:) for then they may begin in that month.

But Hony they gather all the yeere: saue onely in those 3. still moneths, when the weather keepeth in both Bees and flowers. v. And it is of two sorts: the one pure and liquid, which is called *Nectar*, the other grosse and solid, which we may by like reason term *Ambrosia*. For both serue for the food of these diuine creatures.

* Yea rather this is the true *Nectar* & *Ambrosia* wherwith Jupiter was first nourished in the Isle of Crete, P. c. 4. n. 6. while the Curetes hid him fro *Saturn*. Which gaue occasion to the Poets of this fiction, that the Bees were his nurses.

April.
To
August.

nestes. *Dicteo cells regem pavore sub antrō. Virg. Geor. 4.* And afterward, when they would make him immortal, because of the long-preterning vertue, that hony hath, (v. c. 10. par. 3. n. 1.) they fained it to be his immortall food. *Iupiter Ambrosia satur est & nectare vivit. Mart. l. 22. Ep. 58.*

The grosse hony is gathered by their fangs : from whence it is conueied by the fore-legs to the thighes of the hind-legs. (*Qua flores comportant prioribus pedibus fœmina onerant propria id natura scabra, pedes priores rostro : totaq; onus a remeant sarcina pandata*) and that so nimblly, that vnlesseyou haue a quicke eie, you can scarce perceiue it.

This worke may best be seene in the spring, when they gather vpon the blackthorne : for then by reason of the cold they are not so quicke.

When they haue brought these burdens home ; they vnlod them into the dry cells for the young to feed on, which are not yet able to flic abroad. And in the beginning and ending of the yeere, looke what they saue when the weather is faire, they lay vp for thenselues against a rainy day. Which, while it is good, they will feed on, to saue their Nectar as much as may bee. But this kinde of hony is like vnto fresh fish : it must not long be kept. For if being laid vp in the cells, by reason of plenty that comes in fresh and fresh, it lye vnspent ; after a while it corrupteth, and of sweet becometh the sowrest and the most vnsauory of all things both to taste and smell : which then they commonly call Stopping or Coome. Where there is any store of this stiffe, it doth so offend the Bees, that oft times it maketh them to forsake all. Most of them will that yeere goeforth in swarmes : and those few that are least will never prosper.

Anent this leg-stiffe or grosse hony there is a generall error. For, without all scruple or doubt, men doe count it and call it wax : (as did some also in time of old, whose opinion Aristotle doth thus deliuer: *Ceram apes perreptando flores capiunt priorum acumine pedum : mox priores in medios abstergunt, & medios in blesa posteriorum.*) But against (as I shall shew you) both sense and reason.

If you put it to your tongue, it hath the taste of hony : which wax hath not. If you feele it betweene your warme

Bees by creeping upon ^O & ² ₃ ⁴ ₅ ⁶ ₇ ⁸ ₉ ¹⁰ ₁₁ ¹² ₁₃ ¹⁴ ₁₅ ¹⁶ ₁₇ ¹⁸ ₁₉ ²⁰ ₂₁ ²² ₂₃ ²⁴ ₂₅ ²⁶ ₂₇ ²⁸ ₂₉ ³⁰ ₃₁ ³² ₃₃ ³⁴ ₃₅ ³⁶ ₃₇ ³⁸ ₃₉ ⁴⁰ ₄₁ ⁴² ₄₃ ⁴⁴ ₄₅ ⁴⁶ ₄₇ ⁴⁸ ₄₉ ⁵⁰ ₅₁ ⁵² ₅₃ ⁵⁴ ₅₅ ⁵⁶ ₅₇ ⁵⁸ ₅₉ ⁶⁰ ₆₁ ⁶² ₆₃ ⁶⁴ ₆₅ ⁶⁶ ₆₇ ⁶⁸ ₆₉ ⁷⁰ ₇₁ ⁷² ₇₃ ⁷⁴ ₇₅ ⁷⁶ ₇₇ ⁷⁸ ₇₉ ⁸⁰ ₈₁ ⁸² ₈₃ ⁸⁴ ₈₅ ⁸⁶ ₈₇ ⁸⁸ ₈₉ ⁹⁰ ₉₁ ⁹² ₉₃ ⁹⁴ ₉₅ ⁹⁶ ₉₇ ⁹⁸ ₉₉ ¹⁰⁰ ₁₀₁ ¹⁰² ₁₀₃ ¹⁰⁴ ₁₀₅ ¹⁰⁶ ₁₀₇ ¹⁰⁸ ₁₀₉ ¹¹⁰ ₁₁₁ ¹¹² ₁₁₃ ¹¹⁴ ₁₁₅ ¹¹⁶ ₁₁₇ ¹¹⁸ ₁₁₉ ¹²⁰ ₁₂₁ ¹²² ₁₂₃ ¹²⁴ ₁₂₅ ¹²⁶ ₁₂₇ ¹²⁸ ₁₂₉ ¹³⁰ ₁₃₁ ¹³² ₁₃₃ ¹³⁴ ₁₃₅ ¹³⁶ ₁₃₇ ¹³⁸ ₁₃₉ ¹⁴⁰ ₁₄₁ ¹⁴² ₁₄₃ ¹⁴⁴ ₁₄₅ ¹⁴⁶ ₁₄₇ ¹⁴⁸ ₁₄₉ ¹⁵⁰ ₁₅₁ ¹⁵² ₁₅₃ ¹⁵⁴ ₁₅₅ ¹⁵⁶ ₁₅₇ ¹⁵⁸ ₁₅₉ ¹⁶⁰ ₁₆₁ ¹⁶² ₁₆₃ ¹⁶⁴ ₁₆₅ ¹⁶⁶ ₁₆₇ ¹⁶⁸ ₁₆₉ ¹⁷⁰ ₁₇₁ ¹⁷² ₁₇₃ ¹⁷⁴ ₁₇₅ ¹⁷⁶ ₁₇₇ ¹⁷⁸ ₁₇₉ ¹⁸⁰ ₁₈₁ ¹⁸² ₁₈₃ ¹⁸⁴ ₁₈₅ ¹⁸⁶ ₁₈₇ ¹⁸⁸ ₁₈₉ ¹⁹⁰ ₁₉₁ ¹⁹² ₁₉₃ ¹⁹⁴ ₁₉₅ ¹⁹⁶ ₁₉₇ ¹⁹⁸ ₁₉₉ ²⁰⁰ ₂₀₁ ²⁰² ₂₀₃ ²⁰⁴ ₂₀₅ ²⁰⁶ ₂₀₇ ²⁰⁸ ₂₀₉ ²¹⁰ ₂₁₁ ²¹² ₂₁₃ ²¹⁴ ₂₁₅ ²¹⁶ ₂₁₇ ²¹⁸ ₂₁₉ ²²⁰ ₂₂₁ ²²² ₂₂₃ ²²⁴ ₂₂₅ ²²⁶ ₂₂₇ ²²⁸ ₂₂₉ ²³⁰ ₂₃₁ ²³² ₂₃₃ ²³⁴ ₂₃₅ ²³⁶ ₂₃₇ ²³⁸ ₂₃₉ ²⁴⁰ ₂₄₁ ²⁴² ₂₄₃ ²⁴⁴ ₂₄₅ ²⁴⁶ ₂₄₇ ²⁴⁸ ₂₄₉ ²⁵⁰ ₂₅₁ ²⁵² ₂₅₃ ²⁵⁴ ₂₅₅ ²⁵⁶ ₂₅₇ ²⁵⁸ ₂₅₉ ²⁶⁰ ₂₆₁ ²⁶² ₂₆₃ ²⁶⁴ ₂₆₅ ²⁶⁶ ₂₆₇ ²⁶⁸ ₂₆₉ ²⁷⁰ ₂₇₁ 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ingers, it muttereth apart: where wax sticketh fast together. If you put it to the fire, it melteth not, as wax doth. And whereas wax is all of one colour, i. white at the first, v. euen as those little fallings of the new swarmes; (which is wax indeed) this leg-honie is of diuers colours, white, blacke, yellow, greene, red, tawny, orenge, murry, and of sundry midling colours. Therefore sense doth say it is no wax.

real waxy
P. n. 14.
and reasons.
25.
Tare: Apr. Virg. Aug.

The reasons are two. The first is, because when they gather abundance of this stiffe, they haue neuer the more wax. The other because when they make most wax, they gather none of this.

For proofe of the first, All the Bees betweene Virgo and Taurus doe gather abundance of it: and yet are not their combes in this time any whit enlarged. Also one of those old stalls that are full of combes, doth carry more of this matter all the summer long than many swarmes: and yet haue they no more wax at the end of the yere than at the beginning.

For proofe of the other, The new swarmes within one weeke, if the weather serue them, will haue halfe filled their hives with combes: and yet in all this space shall you scarce see one carry any of this. If you would know the reason why the stocks gather so much, and the new swarmes so little; it is because the stocks haue schadous which they feed with it, and the new swarmes haue none. And if any foolish Bee doe carry in *Ambrosia*, it is put in a dry cell where it turneth to Stopping, v. as I haue seene within a fortnight after the hiving.

P. n. 21.
26.
And by ambo-
ritie.
Nat. hist. I. II.
c. 7.

And this, though now it seeme new, yet was it knowne many ages agoe. *Plinie* writeth of it thus: *Prater bac* (i. *præ-ter* *ceram & nectar*) *convictitur erithace*, *quam aliqui sanda- racham*, *alijs cerinthum* *vocant*. *Hic erit apum dum operantur cibus*: *qui sepe invenitur in favorum inanitatibus sepositus*; & *ipse amari saporis*. Speaking in the last words of that which is corrupted v. And before him *Aristotle* himselfe thus: *Mel apibus tum astate tum hyeme cibo est*: *sed recondunt alterum quoq; cibarij genus*, *cui dexterities cerea proxima*, *quod sandaracham nonnulli appellant*.

P. n. 27.
Hist. I. 9. c. 40.

The Nectar or liquid hony the Bees gather with their tongues, whence they let it downe into their bottles, which are within them like vnto bladders: each of them will hold a drop at once. You may see their little bellies strut withall. Men thinke, because they see nothing on their legs, that they come in leere: when they are better and more heauily laden than the other. These bottles, as soone as they come home, they empty into their combes. *Mel ore evomunt in cellas.* This Nectar, being cleere as Crystall at the first and liquid as water, when it is two or three yeeres old, becometh white and hard. *Concrexit autem mel concoctum jam tempore: initio enim, ut aqua, dilutum est, & primis diebus sine crassitudine cernitur.* While it continueth liquid, and will runne of it selfe, it is called liue-hony: when it is turned white and hard (euen like vnto sugar) it is called corn-hony, or stone-hony.

And the liue-hony is of two sorts: that which is gathered by a swarne, cleere and crystalline at the first, v. layd vp in virgin-wax, v. and taken the same yeere, is the right virgin-hony: the other, which is yellow and thicker, gathered by an old stall, and therefore kept in corrupter cells with droffe and courser hony, is called ordinary.

The first shooe whereof (specially in a plentifull yeere of Nectar-dewes) running sheere of it selfe, is a kinde of virgin-hony, v. and little inferiour to the right.

Nectar, whether it be ordinary or virgin-hony, is either finer or courser, according as the soile is where it is gathered: v. For the best countries, which yeeld the best wheat and the best wooll, yeeld also the best hony. And therefore the wood-lands of Hampshire haue better honie than the heath, and the champion or field country, better than the woodlands. The reason is, because where the flowers are most fragrant and vertuous, as well of the fields as gardens, in the purest and sweetest aire; there the honi-dewes, which are extracted from them, are most fine and pure, v. n. 40.

When the cells are full, they close them vp with little filmes of wax, which they will not breake vntill winter and hunger driue them to it. And thus doe they all the summer,

27.

How the pure
Nectar is gather-
ed.

Hist. an. li. 5. c.

22.

Hist. an. l. 5. c.

22.

28.

Two sorts of
Nectar.

Line-hony and
stone-hony.

29.

Liue-hony of
two sorts.

Virgin-hony.

V. c. 10. p. 2. n. 6.

13.

V. n. 14.

30.

The finest ordi-
nary is a kinde
of Virgin-hony.

V. c. 10. p. 2. n. 6.

31.

All hony, courser
or finer, accor-
ding to the soile.

V. c. 10. p. 2. n. 13.

32.

The full cells they
close with wax.

descending lower and lower from one cell to another, vntill *Virgo*: after which time they lay vp no more in store. For honie then waxeth scarce abroad: and thence-forth they can gather no more wax to shut it in. As for that which they purchase by fight and forraging, it doth them little good. For the most part of it they presentlie spend: and if they saue any, they halfe fill a few cels with it: which being vncouered, either themselues or some other theeuues quicklie devoure: according to the Prouerbe, *Euill gotten goods are soone spent.*

33.
Nectar & Am-
brosia made of
many simples,
whereof each mo-
neth yeeldeth
variety.

From
February
to
November.

Nat.hift.lib.
11.c.8.

34.
Dandelion con-
tineth longest.

Febr.

35.
what Pisces
yeeldeth.

March

36.
what Aries.

April

37.
Taurus.

v.n. 39.

This *Nectar* and *Ambrosia*, together with those sweet and holefome vessells that doe containe them, are gathered from infinite varietie of herbs, flowers, and trees, which God in his prouident bountie hath ordained to succeed one another. So that from *Pisces* to *Sagitt.* there neuer want some plants or other, containing these sweets: which the Bees seatly draw from them, without any hurt to the fruits: *Fruitibus nullis nocetur.*

The *Dent-delion*, or after the French pronunciation *Dandelion*, may well be called *apiastrum* or *mellisophyllum*. For the Bees gather vpon it almost all the yeere. The *Dazy* and *Yelowcrea* are next for continuance, but nothing so much regarded.

The Winter *Giliflowre* and the *Hizell* are the first. For they spring in *Pisces*, and sometime before. After them the *Dazy* and the *hearb Bearefoot*, the *Violet*, &c.

In *Aries* besides those before named, the *Box*, the *Withy-palme*, both *greene yeelding Nectar*, & *yellow yeelding Ambrosia*, *Daffadill*, *Lide-lilie*, *blackthorne*, &c.

In *Taurus* *Slow-tree*, *Plum-tree*, *Gooseberry* not blowne, and blowne, *Cherry*, *Peare*, *Cockbell*, which is a *Wood-flowre*. About the middle of this month the chiefest plants begin to flourish in great abundance: as *Apple*, *Crab*, *Barberry*, *Beech*, *Crowpickes*, *Charlocke*, *Rosemary*, &c. But specially the plentifull *Vetch* and *Maple*. They gather on the flowre of the *Maple* a whole month together, and somewhat on the flowre of the *Vetch* when his time is, &c. but the greatest store of honie is drawne out of the black *Spot* of the little

little picked leafe of the Vetch, which groweth on each side, the two or three ypper-most ioynts. These they ply continually: I neuer saw Verches, how farre soever from Hues, that for three moneths together (if the weather serued) were not full of Bees.

In Gemini, the first moneth of fruitfull Summer, besides those prime Plants, Vetch and Maple, (which now are in their prime) and the rest forenamed; Beanes also, which with their flowers haue also blacke spotted leaues like Verches, on which sometime they gather, Arch-angell, Barberie, Fumitorie, Ribwort a kinde of Plantanic, Holme or Hollie, Hawthorne, Elder, red Honie-suckle, Red-weede, white Honie-suckle, which they like much better than the red, &c.

In Cancer, with the fore-named, the blossome of the Vetch, as well as the Leafe, Benet, Malowes, the soucraigne Tyme, which yeeldeth onely Nectar: and therefore he was deceiued that said *Crura Thymo plena*. Tyme, for the time it lasteth, yeeldeth most and best Honie: and therefore in old time was accounted chiefe, (*Thymus apifissimus ad mellificum. Pastus gratissimus apibus Thymum est.*)

Dum Thymo pascentur apes, dum rore cicadea.)

Himettus in Greece, and Hybla in Sicily were so famous for Bees and Honie, because there grew such store of Tyme: *Propter hoc Siculum mel fert palmam, quod ibi Thymum bonum & frequens est.* The Knap-weed flourisheth about the middle of this moneth, and the Blackberie about a weeke after: Both which, as sweet and plentifull, the Bees much haunt.

But the greatest plentie of the purest Nectar commeth from aboue: which Almighty God doth miraculously de-still out of the Aire, (*aerei mellis caelestia dona*), and hath ordained the Oake, among all the trees of the Wood, to receiue and keepe the same vpon his smooth and solide leaues, (*Et quercus sudabant roscida mella*) vntill either the Bees tongue, or the heat of the Sunne haue drawne it away. When there is a Honie-dew, you may perceiue by the Bees: for, as if they smelld it v: by the sweetnesse of the Aire, they presently issue out of their Hues, in great haste following one an other:

^{38.}
Gemini.

May

^{39.}
cancer.

Tyme

Pl. nat. hist. l.

11. c. 2. 1.

Hist. l. 9. c. 40.

Vir. Georg. 4.

Var. l. 3. c. 16.

⁴⁰

Of Honie-dewes.

Virg. Georg.

Virg. Pollio.

⁴¹.

The Bees worke
most easinesly
in a Honie-dew.

V. c. 1. n. 44.

other: and refusing their old haunts, search and seekē after the Oake: which for that time shall haue more of their cu-stome, than all the Plants of the Earth. Sometime the Maple and Hazell, take part with the Oake: but little and sel-dome. While the Honie-dew lasteth, they are exceeding earnest, plying their businelle like men in Harvest: you may see them so thicke at the Hiue-doore passing to and fro, that oftentimes they throw downe one an other for haste.

42.
What the Honie-
dew is.

Nat.hist. lib. 11.
c. 12.

Galen. de ali-
ment. lib. 3.

v.* in 43.

See also Aristotle v. 22

Nat.hist. lib. 11
c. 12.

v. 6. 10. p. 1. m. 20

43.
When the Honie-
dewes are most
frequent.

What this *Mel Roscidum* should be, *Plinie* seemeth much to doubt where he saith, *Sive illud sit coeli sudor, sive quaedam syderum saliva, sive purgantis se aeris succus*. But, if conie-
tures might be admitted, I would rather iudge it to be the verie quintessence of all the sweetnesse of the earth (which at that time is most plentifull) drawne vp, as other dewes, in vapors into the third Region of the Aire, by the exceeding and continuall heat of the Sunne; and there concrete and condensed by the nightly cold into this most sweet and Soueraigne *Nectar*: and then doth it descend vnto the earth in a dew or small drizling raine: that he might well say, *Constat materiam, ex qua mel gignitur, rori esse congenerem*. Which opinion is the more probable for these reasons. First because that when the yeare is backward in his fruits, the Honie-dewes are also backward: comming onely at such time as the flowers haue the most solid and best iuyce. Be-
fore, when the iuyce is weake and waterish, and afterward, when it is dried and wasted, they are not. v: Secondly, be-
cause that in more hot & Southerly climats, where the fruits are more forward, the Hony-dewes also are more timely: as in *Italy* before *Gemini*. *Non omnino*, saith *Plinie*, *prius vergiliarum exortu*: v. whereas with vs they fall not vsually before *Cancer*. And thirdly, because the Countries that haue store of the best and sweetest flowers, haue euer the best Honie. v. n. 29.

The hotter and drier the Summer is, the greater and more frequent are the Honie-dewes: cold and wet weather is vni-kinde for them: much raine at any time, as comming from a higher Region, washeth away that which is alreadie eleua-
ted: (so that there can be no more vntill an other fit of hot
and

and dry weather) and in the end it dissolueth them quite.

The time in which these Honie-dewes fall, is vsually betweene the first and last dajes of this moneth: although the continuance of hot and dry weather may cause them come somewhat rather, or last somewhat longer, euen vntill mid-Leo or * after. They may happen at any time of the day: but for the most part in the morning before it be light: *Sub lucanis temporibus. Itaq; tum prima aurora folia arborum melle roscida inveniuntur.* And then shall you haue the Bees vp in a morning as soone as they can see, making such a shrill noise where they goe, that, as merrie Gossips when they meet, a man may heare them farther than see them.

* In the yeare 1613, almost two moneths after the vsuall time, namely in the later part of *Virgo*, there fell duers Honie-dewes: which came to passe by reason that continuali wet kept them backe in their due time, and *Virgo* followed exceeding hot, sic weather for them. But because the state of the flowers was then weake, the state of those Honie-dewes also was so weake, that the Bees were little the better for them. The stalls, that were taken, proued light: and most of the swarmes and stocks, that were kept for store, died for want before the end of Winter. Except onely in the Heath Countries, where the Heath-flower being then in his prime, those late Honie-dewes made fat stalls.

In *Leo* Vetches, Malowes, Tyme, Knap-weede, Blacke-berie, white Honie-suckle, Redweed, Thistle, Melone, &c.

Now also doe they gather on the Lauender, if their hastie Dames doe not gather it from them before it be readie.

In *Virgo* Knap-weed, Black-berie, Redweed, Dandelion, Malowes, Borage, &c. and the ample Heath, which yeeldeth Honie like vnto their Wooll. *V. n. 31. and c. 10. p. 2. n. 12.*

In *Libra* Dandelion, Heath, Iuie, &c.

In *Scorpio* Dandelion, Iuie, Arch-angell, &c.

And in this great varietie this is strange, that where they beginne they will make an end: and not meddle with any flowre of other sort, vntill they haue their load. *Mos apibus ne florum plura genera petant uno eodemq; profectu, sed singularis singula.* Insomuch that those which beginne with the flower of the Vetch will not once touch the rich spotted leafe of the same, before they haue beeene at home. Although when they come to a flower that yeeldeth both *Nectar* and

44
The time when
they fall.

Nat. Hist. li. 11.
c. 12.

45
what Leo yeeldeth. July

46.
Virgo. Aug^t

47.
Libra. Sep^r

48.
Scorpi. Octob^r

49.
The Bees gather
but of one kinde
of flower in one
voyage.

Hist. an. I. 9. c.
40.

50

They gather Honie
out of poison."Matthers or
May-weed,
Convolvulus sepium.

51.

What store of
Honie a stall
may haue.

Ambrosia, they will vse sometime the Tongue, and sometime the Fangs, and gather them both.

But this may seeme more strange and wonderfull, that out of the most stinking and poisonfull weeds, as Redweed, * Margs, Henbane, and the like, they gather most sweet and holesome Honie: and yet regard not some of the best and sweetest Hearbs and Flowers, as the Rose, the Prim-rose, Cloue-Giliflowers; Wheat, Barley, Pease, &c.

What store of Wax and Honie a stall may gather, is vncertaine: some hauing more, some lesse, according to the number of the Bees, the greatesse of the Hiu, and the plentifulnesse of the yeres. With vs it is counted a good stall that yeeldeth two or three gawnes of Pulse: although in a tree there haue beeene found more than seuen or eight. But in other Northerne Countries we reade of farre greater

Nat. hist. li. 11.
c. 24.De legatione
Moscovitarum,
& Munsterus
de Moscovia.

quantities. *Plinie* affirmeth, that there was seene in *Germany* a Honie-comb eight foot long. And *Paulus Iovinus*, that in *Moscovia* there are found in the Woods and Wildernesses great Lakes of Honie, which the Bees haue forsaken, in the hollow trunkes of maruellous huge trees. In so much that Honie and Wax are the most certaine commodities of that Countrey. Where, by that occasion, he setteth downe this Storie, reported by *Demerrius a Moscovite Ambassador* sent to *Rome*. A neighbour of mine (saith he) searching in the woods for Honie, slipt downe into a great hollow tree, and there sunke into a Lake of Honie vp to the breast: where when he had stucke fast two daies, calling and crying out in vaine for helpe, because no bodie in the meane while came nigh that solitarie place; at length when he was out of all hope of life, he was strangely deliuered by the meanes of a great Beare: which comming thither about the same businesse that he did, and smelling the Honie stirred with his striuing, clambered vp to the top of the tree, and thence began to let himselfe downe backward into it. The man bethinking himselfe, and knowing that the worst was but death, which in that place he was sure of, beclipt the Beare fast with both his hands about the loines, and withall made an out-cry as lowd as he could. The Beare being thus sudainly

Paulus
Iovinus

a Gun Time

dainely affrighted, what with the handling, and what with the noise, made vp againe with all speed possible: the man held, and the Beare pulled, vntill with maine force he had drawne Dun out of the mire: and then, being let goe, away he trots, more afeard then hurt, leauing the smeared Swaine in a ioyfull feare.

THE Bees earnest and hot Labour, and the drought of the Aire, together with their choleric Complexion, which their very hue bewrayeth, doth cause them much to desire cold Water. Somethinke it serueth onely to feed their Schadons: (*Aquam tum portant, cum prolem nutritunt*) v: and that not without reason, seeing that *Ambrosia* their daily food is hot and dry: and indeed when the Drones are done away, and breeding is ended, the Bees are nothing so frequent at the watring-places. But *Columella* thinketh the vse thereof to be more generall, *Sine quaque, favi, neg, mel-la. nec pulli deniq, figurari queunt.* Vnto whom the Poet, in the place first cited in this Chapter, seemeth to assent; making water and flowers the common matter of their three workes.

The Watring-place should ^a not be farre from your Garden, ^b in the next side of a Pond or Brooke, ^c made sheluing, not very steepe, in manner of a Foord, and ^d defended from Beasts, Geese, Duckes, and such like: and especially young Ducklings, v. ¶ 3. in n. 59.

^a For they will never goe farre for water, if any be to be had neere hand. *Sub manibus urbis aquantur.* And therefore when you see Bees watring in woods or other places, not neere any Hives; bee sure those are wilde Bees, which are not farre from their neast. Watch them therefore which way they flie: for they will thence directly to it. Which if it be not within view, take a Reed or Kex, or some like hollow thing open at one end, with a chinke cut in the other to let in light: and taking vp a Bee by the wings put her into the Cane, and shut her in with your thumb: while she goeth downe to the light, put in an other, and so as many as you thinke good. And then where you last see the Bees flying homeward from the water, goe to that place, and there let out one of the Bees in the box: which, when she hath cast a Ring to know where she is, will fly as directly home as the other: likewise where you see her last, let out another: and so the rest, vntill they haue brought you to the stall.

^{52.}
Bees haue nece-
sarie vse of wa-
ter.

^{53.}
Chiefly for their
breed.

Hilt. an. l. 9. c. 40
V. 5. 7. N. 24.

Dere rust. l. 9.
c. 5.

^{54.}
The making of
the Waterring-
place.

Virg. Geor.

^{55.}
How to finde
wilde Bees.

• Lest the Bees, flying ouer the water vnto it, bee throwne downe by tempestuous winds, and so drowned: for which cause it is good to lay lugs ouerthwart the water, and other staies; that recovering them they may dry themselues againe, and so escape.

Virg. Geor.

*In medium, seu stabiliuers seu profuet humor,
Transversas salices & grandia cuncte fixa,
Pontibus ut crebris possint confestere, & alas
Pandere ad astrum solem, si forte morantes
Spatserit, aut praecepit Neptuno immerserit Eurus.*

• That they may safely settle vpon it, and that it may alwaies be kept moist by the neerenesse of the water. For they choose rather to draw their drinke out of moist earth, than from the water it selfe, though it be never so cleare: peraduenture that the earth hauing receued his earthnesse, which before was insensibly mixt with the water, their triple searching tongue might the better trie out the pure element of water.

• Which otherwise will be the death of many: for they are so earnest in their busynesse, that though you offer to tread vpon them, they will not moue.

56.

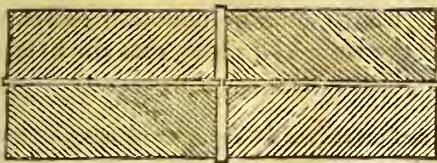
Bee-troughes in
Gardens profita-
ble.

V. n. 53.

But because in the cold windie weather of the Spring, (at which time of the yeare the Bees haue most vse of water, v.) these watering places of Ponds and Brookes are dangerous; (where you may then see many throwne downe, and drowned, and others, that scape drowning, to be so chilled, when they haue filled themselues with cold water; that they are not able to endure the wind, but faile and fall by the way) therefore it is behoueful to haue Troughes in your gardens, made for the nonce: whence the Bees may both sooner and safer fetch their water.

57.
The forme and
size of a Bee-
trough.

For the forme and size of a Trough, let his hollownesse be two foot in length, seuen or eight inches in breadth, and foure in depth; the bottome foure inches thicke; the ends six or seuen; and the sides halfe so much. Moreouer, let the hollownesse be diuided into foure equall parts, by one partition of inch-board, in the middle from side to side; and by two partitions of halfe-inch-board, from each end vnto the middle partition: after this fashion.



And to keepe the Bees from danger of drowning, vnto which they are very obnoxious, (for if they but touch the water with their wings, they cannot rise from it) let each Quarter of the Trough haue his Couer, in thicknesse about halfe an inch, in breadth and length fitting to his Quarter; but so, that without let it may rise and fall with the water.

The matter of this Couer must be cork, which must as well haue open spaces for the water to take aire; as places for the Bees to light on: lest it being couered too close, doe corrupt and become vnsauourie. It is best to diuide each couer into two equall parts: and in the edges on both sides to cut little nickes. And so this may be the forme of it.



Other fashions both of their Troughes, and of their Couers, may be deuised: but these haue seemed to me in all respects most fitting.

A new Trough thus framed and fitted, is to be seasoned before it be vsed, by often scalding it, and changing the foul water; vntill, hauing stood a day or two, it remaineth cleare, and without a glistering slime: afterward the older and more earthie it is, the better they like it.

The Trough being seasoned, set in some conuenient place, about a pearch from the Bees; hauing a moueable plancke,

58.
*The trough-co-
uer, and the rse
of it.*

59.
*The seasoning
and ordering of
the Bee-trough.*

or the like, to defend it from cold rough winds in the spring, and from the Sunne when it is hot. At which time keepe the Trough full, lest the water be soone ouer-heated: and in cold weather let the water be shallow, that the Bees may drinke safely below, out of the chilling wind.

¶ 1 Bespread the ends of the Trough with cow-cloome, to keep them from chapping.

¶ 2 In frostie nights couer all the Trough, to keep the water from freezing.

¶ 3 Keepe all Poultrie, and specially Ducklings, and Hens with chicken, out of your Garden: for, drinking at the Troughe, they will trouble, and tread vpon the Bees. And the brood-hens will kill them, for feare of flinging their chicken: and so will Ducklings also at the first, taking them for flies; which when they haue tasted, they will afterwards let alone.

60.
Bee-troughes of stone.

61.
Sometime they water in the streets.

62.
And after a shoure, all about the garden.
¶. 6. 4. n. 13.

You may also make good Troughe of Free-stone, with wooden partitions let into the stone: but they are more apt to chill the Bees in cold weather, vntill they be mossie.

Sometime they will lie sucking at the neere plashes, puddles, and mire in the streets: where many are trod vnder foot of men and beasts. See therefore that such places be kept cleane and drie.

After a shoure they water for the most part in your Garden vpon the bare earth, the grasse, and wheresoeuer they finde it wet from aboue. In the chiese breeding months *Aries, Taurus* and *Gemini*, v. when the cold raine or wind hath kept them in some part of the day, they will lie so thick vpon the ground, if you haue any store; that you can scarce tread beside them. At such time therefore let no heedlesse stranger come among them.



C H A P. V I I.

Of the Bees Enemies.



He good Bee, as other good things, hath many Enemies, from which shee needeth your helpe to defend her: namely, 1. the Mouse, 2. the Wood-pecker, 3. the Tit-mouse, 4. the Swallow, 5. the Hornet, 6. the Waspe, 7. the Moth, 8. the Snaile, 9. the Emere, 10. the Spider, 11. the

Toad, 12. the Frog, 13. the Bee, and 14. the Weather.

The Mouse, whether he be of the field or of the house, is a dangerous Enemy. For if he get into a Hiue, he teareth downe the Combines, makes hauocke of the Honie, and so starues the Bees. Some enter by the doore, or by some open place in the skirts of the Hiue: some gnaw a hole thorow in the top of the Hiue, where they know the Honie lieth: some keepe their old homes, and come to the Hiue onely for their baits: some make their nests betweene the Hackle and the Hiue, that they may the sooner and the safer come to the Honie at their pleasure.

For remedie, first you must looke that your Hiues, whether they be of straw or wicker, be close and fast wrought. For if the straw be loose and soft, they will more easily gnaw their way thorow: and if the wicker be thinne, when they haue torne downe the cloome, they will creepe in betweene the twigs. Next see that the Hiues be daubed close round about the skirts, that there be no entring but by the Doore: which in *Taurus*, when the Bees come downe to watch, and thenceforth all the Summer, they will keepe well enough both day and night: but all the Winter, at which time the Mise make most spoile, it must be made so narrow, that they cannot get in. v. Also it behoueth you to remoue all things about your Hiues, that may hide and harbour them, v. for they will feare

1. *The Bees Enemies are many.*

2. *The Mouse.*

3. *Remedies against the Mouse.*

v. 6, 3, n. 37.
3
to v. 5, 2, n. 8.

V. c. 5. n. 23.

to come and goe in sight, lest the Cat meet with them by the way. Moreover, it is good now and then, in drie and warme daies, to take off the hackles, as well for this as for other causes. v. Those that neastle vpon the top of the Hiue, when the hackle is taken off, will sit still amazed so long, that you may be sure to crush them against the Hiue with your hand. Lastly, you shall doe well to set baited * traps in their way, that so they may come short.

A Samsons Post.

* There is none better than a Samsons Post: which is a flat Couer or Roofe supported by a triangular Pillar or Prop, whose three sides doe so hold one by another, through the weight of the Roofe, that the loosing of one is the loosing of all: and so the Prop failing the Roofe falleth.

The Roofe.

The Roofe may bee a Plankes or Boords end, or the like, twelve inches long and ten broad: which of it selte, or with some aduantage weigheth foure or five pound.

The parts of the Prop.

The three sides or parts of the Prop (namely, the Post, the Sweeke, and the Brace) are three sticke, all almost halfe an inch broad, and halfe a quarter of an inch thick.

The Post.

The Post is moreouer three inches and a halfe long, and sharped at one end.

The Brace.

The Brace likevise three inches and a halfe long, and sharpe at one end; with a nicke on the broad side halfe an inch within the other end.

The Sweeke.

And the Sweeke eight: inches long, with a nicke on the upper broad side a little within the out-end; and another on the left edge, two inches and the thicknesse of the Post within the broad nicke.

The framing of the Prop.

The parts of the Prop being thus formed apart, are to be framed together in a triangle, after this manner. First, take the Brace in your left hand, and beare vp the fore-side of the Roofe with the blunt end, the nicke being inward: then set vp the Post somewhat leaning toward you, with his sharpe end in the nicke of the Brace: then kooke the edge-nicke of the Sweeke to the Post: and make all fast with the sharpe edge of the Brace fixed in the broad nicke of the Sweeke.

The baiting of the Sweeke.

But first bait the Sweeke with a thinne peice of good Cheese, or Bacon, or Suet, tyed with a thread vpon the inner end. And bee sure that the Prop doe stand so fickle that it may easily be loosed: and that the Roofe when it falleth, lie flat and euen with the Floore, lest the poore Mouse lose his labour.

*Sed in istar omnium erit hoc unum. R. Farina 1. auenacea no-
ve arida dulcis Drachmas IV. tere : 2. Arsenica alba 3. semi-
drachmam, in puluerem quam queas 4. minimum per se pertere:
5. sacchari puri semi-drachmam cum arsenica contere: saccha-
ratam arsenicam farina permisceto. 6. Compositum hunc pul-
uerem laterculis superimpositum, juxta murium cava, & in locis*

ab ipsis frequentariis (7. cateris amotis esculentis) dispone. Sed nolle primâ simplicem expone farinam: cui vorata farinam saccharatam substituas secundâ: tertâ triplex hic puluis succedat: qui jam audaces satis & nihil suspicantes, duarum vel tricium (patio noctium, & mures & scirces pariter, edes tuas infestantes una omnes perdet. Si vero aduersus luxuriantes scirces certius velis remedium; cum pertrita arsenica drachmâ una contare sacchari drachmam unam: saccharatam arsenicam bynes dulcis molita uncie uni permisceto, & tribus quatuorne locis frequentatis dispone. Aut etiam ibidem passas arsenicâ merâ pertritâ intus modice aspersas. Sed diligentè cura, ne Canes, Galline, aliave innocua animalia istud degustent: quod facies, si noctu tantum expositum interdum recondas.

1. Vel triticæ. 2. Vere.

3. Ut arsenica sit tantum decima compositionis portio: nam si predominetur, mures, & magis scirces, virus odorantes recusant escam, quam rite compositione audiè vorant: sed modicum sufficit.

4. Ne mandentes durisies offendat.

5. Et quod dulcedine oblectat, & quod, ut arsenica bene trita, inter dentes fridet: hoc enim secundâ nocte tñi vorantes, tertâ arsenicam, quam fridore & colere refert, minus metuent.

6. Quantitas nucis avellane singulis sufficit laterculis.

7. Nam si alia suspetant cibaria, fucatas escas deuinant: nec ubi frans semel suboluunt, r̄lus postea decipitalis facile decipientur.

The Wood-pecker or Yippingale, if hee finde any hoale in the Hiue against the Honie, doth with his long round tongue draw it out: but he doth more harme to Wood-Bees then Garden-Bees.

Of Titmice, there are three sorts. The great Titmouse (which of his colly head and breast some call a Colemouse) is a very harmefull Bird. For although sometime hee seeme content with dead Bees, yet is hee a great deuourer of the quicke also. In winter hee taketh them at the Hiue as they come forth: when the cold makes them keepe in, hee will stand at the doore, and there neuer leauie knocking till one come to see who is there: and then suddenly catching her, away he flies with her: and when he hath eaten her, he comes againe for more: eight or nine will scarce serue his turne at once. If the doore be shut that none can come forth, hee labours to remoue the Barre: if that be too heauie, he falls to

4.
2. The Wood-pecker.

5.
3. The Tit-mouse.

6.
The subtil practice of the Tit-mouse.

moyning about the doore for a new way : and when these deuices cannot get them out ; some haue the skill to breake the wals of the daubed Hives aboue, ouer against the place where they lie : and there they are sure to haue their purpose. But in the spring, when the Bees come to the palme, hee standeth there watching for them ; and while they are busie at their worke hee devoureth many. The little Rutset one in the Winter feedeth onl y on dead Bees ; but in the Spring he will take part with the great one. The little greene Titmouse I cannot accuse : except it be only for eating a few dead Bees, and that but seldom in some hungrie time.

2

3

7.

4. *The Swallow.*
Nat. hist. li. 11.
c. 18.
Nat. hist. li. 10.
cap. 24.

The Swallow taketh them as they flie, *Populatur birundo.* & alibi, *Ea demum sola avium non nisi in volatu pascitur.* But I am perswaded shee doth much lesse harme than the Titmouse, although she haue a worse name. The Long-winged Hauke makes the fairer flight ; but the short-winged is the Kitchen-hauke. These birds therefore are not to be suffered.

Virg.

8.

*Remedie against
the Titmouse
and Swallow.*
Hist. l. 9. c. 40.

Let boyes destroy their neasts in Summer , and catch the Titmouse in Winter, with * Traps baited with dead Bees, Oats, or Tallow. Aristotle ioyneth the Wasp, the little Titmouse, the Swallow, and the great Titmouse together. *Inserunt injuriam apibus maxime vespa, & avicula quas paros vocant, atque etiam birundo, & merops qui apiaoster est. Quamobrem apiarum vesparum latibula, & birundinum ac meropum nidos propinquos alveis tollunt.*

* As Cage traps, Pit-falls, and Sanisons-Posts (v. * in n. 3) But then set a Lath before the Prop , leaning from the Floore to the Roofe, lest the busie Bird throw it downe for nothing.

9. *The Hornet.*

The Hornet also devoureth Bees : being so much too strong for them , that they can make no resistance. Which the Poet meant where he said,

Virg.

Aut asper crabro imparibus se immisicit armis.

Hir manner is to fly about before the hive, till she haue spied hir prey settled at the doore: and then suddenly she taketh it in hir feet, and flieth away with it as a Kite with a Chick.

In

Of the Bees Enemies.

C. 7.

117

In destroying the Hornets you must bee warie : for one stinging doth oftimes cause a Feuer, and lesse than thirtie, as some say, will kill a man. *Iltius crabronum band temere sine febri est. Autores sunt ternovenis pisnitis interfici hominem.*

10.

*The Hornets
sting is danger-
ous.*

The Waspe doth much more hurt than the Hornet. For the Hornet now and then killeth a Bee : but the Waspe watech the Honie, whereby many whole Stalls doe perish. For, besides the harme that she doth hir selfe, she doth oftimes set the Robber v. on worke : who, when the Waspe hath begun, will be readie to take part with her, and then all goes to wracke. A Waspe is by nature harder and stronger than a Bee, specially in *Libra* : insomuch that oftimes she breaketh from two or three of them, though they haue all hold of her at once : and perhaps killeth one of them out of hand. At *Cancer*, or, the Spring being hot and drie, in the later part of the former moneth, the Waspe beginneth to bee bred: v. within a moneth after shee first appeareth: and in a while she beginneth to feed vpon dead and weake Bees : which shee quickly cutting off in the middle with hir Fangs, first carrieth away the neather-part ; and anon fetcheth the other, when shee hath bitten off the wings (for easier carriage) not farre from the place where shee tooke it vp.

Nat. hist. lib. 12.
c. 21.

11.

6. The Waspe.

V. n. 25.

V. c. 4. n. 8.

12.

*When shee feedeth
vpon Bees.*

Within a moneth after hir comming abroad, shee waxeth bold, and aduenturech into the Hiues for honie: but, by reason of the strangenesse of hir voice and habit, shee is deserued before shee come neere. And at the first (while the weather is warme, and the Bees both early and late keepe watch and ward at the Hiues doore) comming single against many, shee is commonly repulsed, and sent backe againe with a Flea in hir eare: and if by chance shee slip in, shee doth not alwaies escape. Sometime shee is killed in the Hiue, and brought forth dead: sometime without the doore, when shee hath got hir prey. But afterwards, the weather waxing cold, and specially in mornings and evenings, and the Bees therefore retiring from the doore higher into the Hiue; the Waspes make great spoile, specially among them that are weake. And this they continue vntill *Scorpio*: after which time they begin to weare. Neuerthelesse while they liue, that is vntill

13.
*When shee stealeth
Honie.*

Q. 2

Sagittarius

14.
*When they weare
away.*

Sagittarius (if abundance of cold and wet rid them not a little rather) they will be filching : and one Wasp will carrie out as much as two Bees bring in.

15.
In what yere the
Wasps are few.
V.c. 4. n. 8.

The Winter wet and cold , killeth many of the Mother-Waspes v. as they lie in their sleepe. The Spring wet and cold hindereth their breeding : for being by that meanes kept in, when their time is come to flie abroad and feed ; they pine and faint , so that either they breed not at all, or verie late. And when a warme fit in the beginning of *Aries* hauing let them abroad, cold and stormie weather commeth suddenly vpon them ; they are shut vp againe, and so starue for the most part with hunger and cold : that your Bees shall not be much troubled with them in such a yeere. Yea continuance of wet, though without cold, is such an enemy to the Wasps; that in the yeere 1613, though , the former Summer being exceeding dry, the Wasps were multiplied, and the Winter being milde, the Mother-Waspes were many at first ; yet the Rainie Spring and Summer, did so spill their nests , that there were no small Wasps seene till *Libra* , and then verie few.

16.
In what yere
they abound.

But the Winter being milde , and the Spring and Summer continuing warme and dry, they liue and breed in euerie place : that, without continual and diligent attendance, you shall be sure of great losse among your Bees, though the former yeere there were but few : For one nest yeeldeth breeders enough , if they should all liue, to store a whole countrey.

For these causes, Ann. 1611. there were every where such multitudes , that the like I thinke was not knowne before in our memorie : insomuch that within two or three Furlongs of my Garden, were killed that Summer aboue fiftie great nests : (and yet, by the resort to our Bees, wee knew we had not all) besides 22. Mother-Waspes killed in the Spring at our Bee-trough, which woulde haue made so many nests. And 1620. for the same causes the number was as great or greater : and yet the exceeding wet Summer following I saw not one small Wasp.

17.
Rem:des against
the Wasps.

Wherfore , if you loue your Bees , suffer not a Wasps nest about you.

The ready way to rid them, is, If they be in a Tree above
the

the hoal, to smother them with Brimstone or Bunt, as you kil Bees. If in the Thatch of an house, (when you haue made way to the Combes) to scald them. If in the ground (as most commonly they are) you may likewise scald them, and so take the Combes out whole, and give the Grubs to your Chicken: although the Boyes make better sport in burning them. But if you be in haste, and care onely to dispatch them quickly and quietly, thus doe. First, stop their way close; that they within breake not out vpon you (for those that are abroad comming home wearie and loaded are more gentle.) Then presently with a * Waspe-spade search for the Nest: which, if it be shallow, is quickly found. When you haue found it (which you shall know by the easie entrance of the Spade) then dig downe round about it: and hauing thus rounded the Nest, stamp the earth downe vpon the Combes, and so haue you done. If you finde not the Nest because it lyeth † deepe; then dig vp the ground a foot about the hoale; and hauing found their way, stop it fast with earth, and tread in that you digged out, and let them alone. If this be done in the day when many are abroad; the euening or morning following you may kill them with your foot: but in the euening you may take them all together.

* Which is a thin Iron one, whose Padle is not aboue foure inches broad next the Socket, and thence taperd vnto three inches at the steeled point, and eight or nine inches long. If it bee broader it is not so apt to enter, and so to finde and round the Nest: and a thicker one is apt to let out the fresh Walpes, that will trouble your worke: but you may make a shift with any ordinarie Spade or Padle-staffe.

† In Corne-ground the Nest is begunne vnder a Furrow, and therefore is alwaies shallow: in old laine it is begunne in a Want-hole, and therefore it is sometime shallow, and sometime deepe.

And to destroy those that resort to your Hives, set by them Sider, Vertjuice, sowre Drinke, or Grounds, in a short necked Violl open, or other Glasse couered with a Paper that hath a hoale in the middle: and so you shall catch many. Also you may take of sweet Apples, or Peares, or beasts Liuer, or other flesh, or any thing that they loue, foure or fve slices or more, and lay them in so many severall places among your Bees:

vpon which you shall haue sometime as many as will couer the Bait, which you may kill at once, as Butchers kill Flies.

Hist.l.9. c.40.

Aristotle teacheth you an other way : Impugnantur (saith he) Apes à vespis : quamobrem Aparij eas venantur constitutā ollā, & carne in ea positā. Vbi enim multæ ad carnem accesserint, apposito operculo super ignem ollam ponunt. You may also vse other meanes to kill them your selfe. How to helpe and defend your Bees against them, see c.3.n.46,47,54,55.

18.

7. The Moth.

The flying Moth lyeth betweene the Hackle and the Hiue, and breedeth little Wormes, or crawling Moths, some in the skirts of the Hiue, some within vpon the Stoole, wrapt in the dross or scouring of the Combes, and some without vpon the Hiue, specially in the cracks of the dawbed Hiues. *Plinic speaketh thus of them: Papilio etiam ignavus luminibus accensis advolans pestifer, nec uno modo: nam & ipse ceras depasit, & relinquit excrementa quibus teredines gignuntur.*

Nat.hist.l.11.
c.19.

They offend the Bees also with their mealiness, as the Snailes doe with their sliminess. Wherefore rid your Hiues of these guests. The Moths are easily crushit before or vpon the Hiue: and the Snailes, though you kill them not, will not long abide, if there be no harbour of long Grasse, Weeds, or other things about the Hiues. But as for the Moth, if you suffer her, your selfe shall haue more cause than your Bees to bee offended. For albeit in the cold Spring shee breed about the Hiues, hatching hir young by the heat of the Bees; yet when the heat of the aire will suffice for that purpose, shee chooseth rather to lay her blotes in woollen, their naturall nest and nourishment: especially if it bee nappie, that there she may safely hide them. In which place, till they be growne to their bignesse, they lie fretting and eating the Cloth: and then after a while they creepe out of their skins flying Moths. The Maides that sunne their clothes to rid the Fleas, let them take heed how they doe it neere the Bee-fold, lest they bring in worse enemies than they carried out. If the Woollen bee oylic or greasie they like it the better: and for that cause good Huswiues Yarnē lyeth not long vnwouen.

20.
What harme the
Moth doth.

If Emets bee neere your Bees, they will much trouble them, biting them and hanging vpon them: although the Bees,

21.

9. The Emet.

Bees, if they be lustie, will kill many of them that come to the Hiue. But if it be a poore Stall, they will in time possesse the Hiue, and eat vp the Honie. The best remedie against them is to scald them.

The Spider, as the Moth, doth vse to harbour betweene the Hackle and the Hiue: where commonly she hath a Bee or twaine in store to feed on, an vnsit messe for such a mouth: Sometime she hangeth hir Nets vnder the Stoole; which easily intangle a wearie Bee, when shet commeth laden home, and missing of the lighting place falleth into them: yea, and sometime where the Bees are few, chiefly in the winter, they will bee bold to enter the Hiue, and there weave their fatal Webbes. *In foribus laxos suspendit aranea casses. Aranei quoq_z vel maxime hostiles: cum prevaluere ut intexant, enecant alveos.*

22.
10. The Spider.

Virg.
Nat. Hist. l. II.
c. 19.

The Toad is by nature so noysome to the Bees, that while he is about the Hiue, though he lie but vnder the Stoole, the Bees will not prosper. He is said also to deuoure them at the Hiue, as the Frog at the Watring-place. *Rana Apes, ubi ad aquam accesserint, rapiunt: quamobrem eas Apiarij per paludes & stagna, unde Apes aquantur, venari solent. Rubeta etiam Apes interimit: subiens enim aditus alvei afflat, & observans rapit evolantes. Nullo hec affici malo ab Apibus potest; sed ab Apiario facile interimitur. Item, Insidiantur aquantibus Rana: qua maxima earum est operatio, cum cum sobolem faciunt. v. Nec haec tantum que stagna riuosq_z obdident, verum & rubetæ voriant ultro, adrepentesq_z foribus per eas sufflant: ad hoc prævolant, conseruantesq_z abripiuntur.*

23.
11. The Toad.

12. *The Frog.*
Hist. an. 19.
c. 40.
Ibidem:

Nat. Hist. l. II.
c. 18.

v. c. 6. n. 53.

But not any one of these, nor all these together, doe halfe so much harme to the Bees, as the Bees. *Apes api, as homo homini, Lupus.* They make the greatest spoile both of Bees and Honie. Foras they of the same Hiue liue in inviolable peace one with another; so haue they no entercourse, no friend ship or societie with others, but are rather at perpetuall defiance, and deadly feud with them. In fight they are fierce, and in victorie mercilesse: within the space of a day or twaine, yea, of an after-noone sometime, if the Hiue bee open

24.
13. The Bee the Bees greatest enemy.

open that they may haue easie passage to and fro, they will haue rid him cleane. And therefore all Bees, of all their enemies, doe most dread strange Bees; knowing well in what danger they are to bee robbed by them both of goods and life.

26.

*Robbing or
fighting of Bees
in winter and
summer but lit-
tle.*

27.

*In the spring
more earnest.*

V. n. 28. & 31.

V. n. 42.

V. c. 3. n. 65.

This robbing is practised all the yeere. In winter, as oft as the weather is faire and warme, some will bee prowling abroad. And some are so theeuishly disposed, that all the summer long, when abundance of Honie is every where to bee had for a little labour, they will yet be filching though they die for it. In the Spring they are more earnest; finding now fit time to fetch after that which they leaft behinde at Haruest, v. and to repaire their decayed store, both of Honie and Bees. v. And therefore now haue an eie vnto them: and defend the weaker swarmes from their violent irruptions. v. Those Stalls that haue lost their Queene, or too many of their companie, or are offended with the corruptnesse of their Combines, or doe dislike their standing for coldnesse, moistnesse, mustinesse, bleernessee, or vnsauorinessse; as taking no pleasure in their liues, doe now easily suffer themselues to be robbed. And if none will come to rob them; then on some faire day they will away together, sometime leauing both Honie and young ones behinde them.

28.

*The most spoile is
made in Haruest.*

29.

*What Stalls are
most subiect to
robbing.*

30.

*What Bees are
the Robbers.*

But in *Virgo* is the most dangerous time of all. Then shall all the Stalls in your Garden bee tryed of what mettle they are made. And *Libra* would not bee much better, but that the most spoile is done before. Little and poore swarmes are now subiect to robbing. Likewise those Bees that are offended with the blacknesse and rottennesse of their Combines, caused through age, or wet, or with abundance of noisome stopping; will most of them goe forth in the swarmes, leauing a very few, sometime not past a handfull, in the stocke: which yet in robbing-time will keepe the doore, as though the Hiuue were full: but the Robbers finding their weaknesse, will surely spoile them, if they bee not preuented. How to know such weake Bees, and what to doe to them, see further c. 3. n. 46.

The Robbers are thought to bee poore swarmes and stocks

stocks, which haue not sufficiently prouided themselues for winter. Of which opinion was *Pline* where hee laid : *Quod si defeccerit alicuius alvei cibas, impetum in proximas faciunt rapina proposito.* But indeed such are fitter to bee robbed, as before is said, than to be robbers. There is no theefe to the rich theefe : who, although he haue enough, and more than enough; yet by hooke or by crooke hee will haue more, though the poore starue for it.

Nat. Hist. l. 11.
c. 17.

At the beginning of Wheat-haruest, the state of flowers decaying, which is alwaies about *Virgo*, the maine robbing beginneth. Then doe they send forth some of their stoutest yonkers to spie and giue the onset : which, going about from Hiu to Hiu so farre as their walke extendeth, doe proue all. Where they haue once sped, at their returne they bring more of their companie; vntill in the end that whole Stall be made acquainted with it. Sometime it happeneth, that though there bee an hundred Stalls within a walke; yet the robberie is done altogether by one: sometime by two or three, all the rest being quiet. And this one thing is strange, that whereas no Bees will abide strangers in their Hiues with them; yet theeeues will suffer one another, and agree all in stealing, though they be of diuers Hiues.

31.
How they begin
the fray.

When the theeeues, hauing first made an entrie, begin to come thicke, and the true Bees perceiue themselues to bee assaulted by many; they suddenly make an out-crie: and issuing out of their holds by troopes, presently prepare themselues to battell. Some keepe the gates: some as Scout-watches fly about: some runne in againe to see what is done there: some beginne to grapple with the Enemie: and that with such a noise and dinne, as if the Drum did sound an all-arme. Besides which base sound, you shall eftsoones, in the heat of the battell, heare a more shrill and sharpe note, as it were of a Flute.

32.
Theees of diuers
Hives agree to-
gether in rob-
bing.

33.
The description
of the Bees bat-
tell.

34.
In the battell is
heard a sound
like a Drum and
a Flute.

Virg.

Auditur fractos sonitus imitata tubarum.
Which I am out of doubt is tuned by their generall Commander, encouraging them to fight for their Prince, their liues, and their goods. Then shall you see the enemies be-

35.
The assault of
the enemie.

R stir

36.
The defence of
the besieged.

stir themselues most venterously : some violently through the thickest thrusting in at the gates, others scaling the walls, and tearing them downe. If they once make a breach; without present succour, you shall quickly haue an end of that fight. On the other side, the defendants will behaue themselves as brauely, not giuing any rest to the enemie : part encoutring with them that are without, part with them that haue broken in: whom in a while they draw out by the heeles, some dead, and some aliue. Likewise without you may see some slaine forthright with the thrust of the Speare: some so deadly wounded, that they are not able to goe three foot from the place : and some more lightly strooken presently to lose the vse of their wings, and for a while to leape vp and downe, forward and backward, like mad things.

How long they liue after they are hurt, see c. I. n. 23.

37.
Neither side
willing to yeeld.

So loth are these courageous warriours to yeeld on either side, vntill there bee no remedie.

Virg.

V. c. I. n. 40.

38.
The exercise of
the defendants
when the enemie
retireth.

*Ingentes animos angusto in pectore versant,
Vsg, adeo obnixi non cedere, dum gravis aut hos,
Aut hos versa fugâ vltor dare erga cogit.*

In their fight they are so furious sometime, and so thicke about the Garden; that, vnslesse you haue on your complete harnessse, v. you may not dare to come nigh them.

This also I haue noted, that when the robbers are so few, that small resistance will serue; yet being called forth they will not bee idle; for you shall see some of them running vp and downe about the Hiuе, to seeke and search if any more come: others, like trained Souldiers, practising to fight: here one wrestling with an other in single combat: there two, or three, or foure setting against one; as their vsuall manner is to deale with the theeuues. If you would know whether this fight bee in jest or earnest, with fellowes or with foes; the manner, and the end thereof will shew you. For if they bee fellowes, their fight is not so fierce, and they will part quietly as friends: whereas if they be foes, though they scape, it shall bee with much adoe. For if the true men cannot kill the theeuves; yet will they hold them by the legs or by the wings so long as they can, in hope to haue helpe, though they

they be drawne after. Moreover the young Souldiers, which haue scarce beeene abroad before, you shall see the elder sort goe round about them, smoothing and trimming them in every place, as if they did addresse, and hearten them to fight.

During the time of this battaile, as afterward, the Waspes like Vultures prey vpon the dead carkasses, carrying them away peece-meale. v. n. 12.

The battaile being ended by repulse of the enemy, those corpses, which the Waspes haue leaft, they honestly burie as farre from the Hues as they can beare them.

— *Tum corpora luce carentum*

Expartant tectis, & tristia funera ducunt.

And then they draw together at the Citie-gates: and there they buzz one to another, as if in their language they did talke of the fight, and commend one an other for their for-titude.

The Robbers, preuailing not that day, will vp the next day so soone as it is light, an houre before the Bees vse to come abroad: and then doe they make a fresh assault. The Bees finding the enemy among them, are presently vp in armes: and so beginnes the second skirmish, which, without the taking of the Citie or the ouerthrow of the assallants, (which seldome hapneth) continueth, vntill very darknesse part them.

When the true Bees, finding themselues ouermatcht with multitude, see there is no remedie, and that no resistance will serue; at length they yeeld, and suffer the Conquerours qui-
etly to spoile their goods. And after a while, when, by be-
ing together in the same Hue, and sucking the same Honie,
all smell alike; they will ioyne with their enemies, and help
cartie away their owne goods, and so become friends and
liue together. At night they lodge with them: but in the
day-time they returne with their new fellowes to fetch that is
leaft behinde. By this meanes some venterous stalls are sud-
dainly much increased both in Bees and Honie: although
when a Swarne not ouer-stored conquereth a poore stall,
and so getteth, by the victorie, more eaters than meat; it

39.

*The Waspes like
Vultures.*

40.

*The battaile en-
ded they bury
their dead.*

Vulg. Geor.

41.

*The second af-
faul of the ene-
my.*

42.

*When the true
Bees yeeld, they
goe with the Con-
querors.*

turneth to their owne ouerthrow : for when their food faileth they dye all together.

43.
Remedies.

Seeing therefore in so cruell and continuing a fight, oftentimes the enemies are Conquerours, and then all is lost ; and if they be vanquishr, yet this victorie is not without losse of men and goods, which the enemy euer now and then shiftest away ; I know your desire is to know how to succour the true men, either by preuenting this dangerous conflict, or by rescuing them in the same. For the first reade C. 3. n. 45.

44.
To prevent rob-
bing.

46 47. For the other many practises haue beeene tried : sonie cast dust, some drinke among them : the one whereof doth no good, the other harme. For drinke maketh them to smell all alike, so that the true men cannot know the. Theeues from their fellowes : and therefore some vs to doe so, when two swarmes are put together, that they may seeme to be of one companie. If these vsuall helps be no helps,

45.
And to slay it, if
you finde it in
time.

what help is there then ? If you perceiue their fighting in time before any great harme be done, then this must you doe. First stop them vp close, that none can passe either in or out, leauing onely a breathing place. Then shall you haue a double conflict, one within, an other without. The theeues that are within, hauing no way to escape with their preyes, first or last will be slaine all. They that are without, after a little wrestling, seeing nothing to be had but blowes, will not long abide this boottlesse danger. When you perceiue the siege to be rased, and that there is little or no fighting without ; (which will be about an houre after) then may you let out your Bees, making the doore halfe an inch high, and scarce halfe an inch wide. Those few that were within will they bring forth to buriall ; some then, some on the morrow. In the euening, when the Bees are all in, shut them vp as before. The next day betimes, before the Bees would be abroad, must you looke for some of them againe. When they are come, beat them away with a bough, but kill them not : for so may you doe your neighbour a shrewd turne, and your selfe too.

But let not the Bees out before noone : and then make the doore so narrow, that but one Bee may passe at once. So will

will they keepe the Robbers out, and follow their businesse neuertheleſſe. The next day you may let them out rather: and if the doore be ſo narrow that it hinder their paſſage, you may make it wider. If this doe not ſuffice, but ſtill the ſtrange Bees will ſtrive to get in; aſſure your ſelſe that ſtall will yeeld. And therefore if you bee loth to take it now, because of the Schadons that may corrupt the Honie; v. then muſt you looke vnto him carefully, leſt by little and little it come to little or nothing.

But if the Bees haue yeelded before you are aware of it, ſo that the theeuers rob quietly without reſiſtance; or haue broken the Honie-cels; (which you may perceiue by the crumblets of Wax vpon the ſtoole) then, hauiing ſhut the Hiue cloſe alſoone as you can, the next euening or morning take that is leaſt: otherwiſe in the end you ſhall loſe all. For the Bees there-about ſmelling the Honie when the Combes are broken, will haue it or die for it.

This fierce and cruell robbing being alwaies in Haruest, when people are buſie in the fields; many Hiues are leaſt Honie-leſſe, and they neuer the wifer. Wherefore it is good to leaue ſome body at home, as well to watch theſe, as the two legged Robbers.

Neither is this robbing hartfull onely to thoſe that are robbed, but to the Robbers alſo. For many of them are dailely cut off in the aſſault: (you may ſee them lyē ſprawling at euerie Hiue-doore) whereby their whole ſtall ſometime is ſo weaſned; that, while they ſeeke to prey vpon others, they become a prey themſelues.

After a moist Spring, when Swarmes are moſt plentifull, v. is robbing moſt riſe: otherwiſe there is leſſe danger.

Besides thoſe Bees that are thus ſpoiled in robbing, many alſo are kiſſed by other ſtalls when they come to them for ſuccour. For in the Spring thoſe Swarmes that were late-ward, or haue beene halfe-robbed; when they haue ſpent all their ſtore, the next warme day after, away they flye: ſome to a tree where they hang till they be dead: ſome aduenture into other Hiues: where if they haue large entrance, that they may throngh in ſuddainely; ſometime they ſcape with

V. c. 10. p. 1. n. 2

46.

When it is too late, and what is then to be done

47.

Robbing hartfull alſo to the Theeuers.

48.

In what yeares robbing is moſt riſe.

V. c. 5. n. 5.

49.

Bees kill poore swarmes that wander in the Spring.

50

*To prevent the death of poore swarmes.**V.c. 10. p. 1. n.*

12.

V.c. 10. p. 1. n.

13.

*Many killed in swarming.**14. The weather.**In Summer heat
hurteth the Bees.**In Winter the
Sun-shine in
frost and snow.**The remedie.**Also the Eastern
winds and great
frosts.**V.c. 3. n. 6. 1.*

the death of some few, and being mingled together continue with them as one stall: but for the most part they die every each one. *v. c. 1. n. 22.*

To prevent this losse, (1) when you perceiue them to wax light and weake; drue them into a stall that hath prouision enough, *v.* (2) If it be your hap to see them entring a stall that is well stored, lift vp the Hiue and let them in together, and so perhaps they may scape: and (3) if you finde any hanging abroad, you may put them into what stall you list; by rearing the stall before a handfull from the stoole, and laying the Bees vpon the Table, *v.* close to the doore.

Lastly, the Bees doe much destroy one an other in swarming-time. *v. c. 5. n. 64, 65, 66, 68, 75, 76, 77, 80, & 81.*

Next vnto Bees, the greatest Enemy that the Bees haue is vnkinde Weather: whereby at all times of the yeare both they and their fruits are much empaired.

In Summer extreme heat melteth the Combes (specially of Swarmes) and so sheddeth the Honie; if the Hiues be not shaded, and well hackled. It also causeth the Bees to lye out, and so hindereth their swarming. *v. c. 5. n. 20.*

At Winter, the Sunne shining in frostie or snowie weather, is dangerous to the Bees. For the shine tilleth them abroad, and the Frost chilleth them: many as they fyie, that they cannot retурne: and many that retурne, while they rest on the ground before the Hiue. But the Snow amazeith them, and dazeling their eyes causeth them presently to fall, and with his vehement cold to rise no more: and most of all then, when, to shun the wind, they light in the shade. And therefore if, the Snow lying, the mildnesse of the weather draw them abroad; it is good to strew the Snow with straw, not onely in your Garden, but also without the fences, specially in the Lee-sides, if conueniently you may: and so shall you sauе a number; which else you might see lying about, like slaine men in a foughten field.

Also the freezing Easterne winds, and all great Frosts kill many in the Hiues that be open, or vncouered: and therefore at such times it is good to shut them vp close, *v.* and to see

see them well hackled, v. c. 3. n. 15.

And if the cold continuing keepe them long in, it maketh them so sick, heauy, and chilly; that many dye assoone as they come abroad into the aire, vnlesse it be very pleasant.

v. c. 3. n. 62.

Also theraine doth oft-times soake into the Hiues, and so corrupteth the Combes, and killeth the Bees: specially where the company is small, not hauing heat enough to drie them againe. Wherefore prouide that alwaies your hackles be good. And for remedie (if any such chance happen) pull off the hackles in warme daies, that the Sunne may dry the Hiues againe.

But the greatest losse is in the Spring. For the Bees, specially the young frie (being laded and wearie with their labour) some at their worke, some in the way home, some at the Hiue-doore are beaten downe; not onely through sudaine stormes, but also through cold rough winds: and then, vnlesse the Sunne shine or the wind lye, they neuer come home againe: insomuch that sometime you may see the Lanes v. strewed with them.

And therefore, when being a field they see a stormie or rainie Cloud arising, presently they hie them home for life: tumbling to the Hiue as thicke as Haile, thronging, and throwing downe one another before the doore for haste. Where, if the cold raine catch them before they can recover the Hiue, they are in no better case than those that the storme beat downe by the way: although, when they are fresh and light, they will flye abroad in the midst of a warme shower, not caring for it.

They which are thus taken abroad, must take their chance: but if you defend your Bee-garden as you ought, v. you shall prevent the fall of many at home. And those that you finde chilled with cold (though they be quite dead, without sense, motion, and breath, yea and haue lien so all the day) you may, if you be disposed, revue with the warmth of your hand; so that it will seeme a miracle vnto you. For prestently (their spirit returning) you shall see them begin to pant and breath againe: and anone they will flye away as lustie as the best.

57.

And the cold
continued ma-
keth them sick.

58.

The raine rot-
teth the Hiues.

59.

The remedy.

60.

The greatest losse
by weather in
the Spring: for
then infinite
multitudes are
beaten downe,
laden and wea-
ry, with stormes,
and wind.

v. c. 1. n. 49.

61.

At the rising of
a Cloud they
post home.

62.

Yet will they go
a field in the
midst of a warme
shower.

v. c. 2. n. 2. 3.

4. & 5.

63.

How to restore
Bees to life.

best. But if you spic any store of such dead or halfe-dead Bees, then your way is to put them in a Glasse, and couering it, to turne it round against the fire, till you see them ready to fyre.

64.

*The wind can-
seth many to be
drowned.*

Also where Palme-withies, or other trees whereon they gather, doe hang ouer the water; the rough winds throw downe and drown a number of them, while they bee at worke. Many also, where there are no such trees, when they come but to drinke.

65.

*There reme-
die.*

*Nat. hist. l. 11.
c. 19.*

For remedie of the first, cut downe the trees: and for the other, see c. 6. n. 56.

*Tot hostibus, tot casibus, tam munificum
animal expoitum est.*

66.
*The last and
worst Enemie of
all.*

¶ There remaineth yet another Enemie worse than all these. For these all doe wrong the Bees but by little and little; some in their goods, some in their persons: and there is remedie shewed, if industrie be not wanting, against them all. But this, when he commeth, playeth sweep-stake with them; carrying away both Honie, and Wax, and Bees, and Huie, and all at once: and there is no sufficient remedie found, either in the Bee-master, or in the Bees themselues against him: neither shall I, with all my skill, be ever able to devise any; vnlesse the wisest of the Land, when they meet together, will ioyne with me in the inuention. For first the Bees are least destitute of their Keepers helpe, seeing at the times of greatest danger, he cannot alwaies be *sub Dio* with them, nor they conueniently *sub Lare* with him: although some haue, for their safetie, put this in practise, housing them and shutting them vp close all the Winter: but not without much inconuenience. For by this meanes they are debarred of their necessarie recreation v: in a warme houre, when it happeneth: and if by chance they breake forth, they lose their way in againe, and their liues withall. And as they want herein their Keepers helpe, so haue they no meanes to save themselues, no not so much as the silly sheepe, which happily may runne away. For their resistance, which against some Enemies doth often preuaile, against the violence of this sliue *Tenebrio* auaileth nothing at all: who stealing vpon them

*V. c. 1. n. 59.
& c. 3. n. 60.*

them while they be at rest, & suddainly surprizing them, carrieth the poore Captives (alasse) they wote not whither. Although I haue read a Storie of a Stall, that being stolne did sharply punish the Malesfactor, making him to submit himselfe vnto their Master, and to aske him fergiuenesse. Indeed I will not be bound for the truth of it, for it is no childe of mine: but if any man desire to take it as it is, he shall haue it as good cheape as I. *Cum noctu latro apes S. Medardi subripuisset, apes ipsa in sancti viri ultiōem, relictis vasis suis, in malefactorem illum circumquag, diffugientem acerrima extenuis instimulatione persecuta sunt, quovsg, ad Sanctum, vellet nollet, regrederetur, & ejus provolutus vestigis suppliciter pro commisso criminē veniam precaretur. Cui mox ut Sanctus manum extendit benedictionis; apes, tanquam obedientes, ab ejus insecurione cessaverunt, & antiquo Domini sui dominio evidenter se se reddiderunt.* Laur. Surius in vita S. Medardi. Tom. 3. When a Theefe by night had stollen S. Medards Bees, the Bees in their Masters quarrell, leauing their Hiu, set vpon the Malefactor, and eagerly pursuing him which way soeuer he ranne, would not cease stinging of him, vntill they had made him, whether he wold or no, to go backe againe to their Masters house, and there falling prostrate at his feet, submisly to cry him mercie for the crime committed. Which being done, so soone as the Saint extended vnto him the hand of benediction; the Bees, like obedient Seruants, did forthwith stay from persecuting him, and evidently yelded themselues to the ancient possession and custodie of their Master.

It were to be wished that *Pares culpā* might be *Pares pañā*, that all like offendors might haue like punishment. But sith our Bees are not of S. Medards kinde, thus to rescue themselues from this mischievous Enemie; it is meet their merit procure them a protection: and as they prouide for the health and safetie of men, v: so men should prouide for the safetie and secure being of them. That such as delight in things for their Country so profitable, might not by idle and theeuish Varlets, vnproufitable members of the Common-wealth, be discouraged in their honest courses. Where-

Laurence Surius.
bs at Lubbeck 1522
ob at Chagno 1578
He wrote Lives of
the Saints 700s. folio
(Watkin: Bio)

Amorevi.

V. c. 1. n. 1.
& C. 10. p. 3. n. 1.
& 2.

fore I humbly and heartily entreat all those, whether they be high or low, which shall reape either profit or pleasure by these my paines, that they would endeavour, as much as in them lyeth, by themselues and by their friends, that against this odious rapine it may be enacted, as a Law of the *Medes* and *Persians* which altereth not; that they which feloniously breake open these true labourers houses, shall, like other House-breakers, bee deemed and iudged as guiltie of Burglairie, and so haue no benefit or fauour by the *Muses*, that thus violate the *Muses* sacred Fauorites. And heere, now my hand is in (though it may seeme a hard digression) let me begge the like boone for those other necessarie creatures, which, for their like certaine and generall profit, the Prouerbe hath ioyned with them in speciall commendation to the world.

*Who so keepe well Sheepe and Been,
Sheepe or wake, their thirst comes in.*

They serue for mans vse both without and within, not only to feed the belly, but also to cloath the back: for which necessarie vses, they deserue especially to be beloued and defended of all. And yet I thinke that in any thing, nay in all things else, there is not so much wrong and spoile done to the Countrey, as in them alone: Sheepe-stealing, through foolish pittie, is now growne so common and so continuall. Whereby, besides the infinit losses which true Subiects daily suffer in that kinde, the Commonwealth sustaineth an other great damage in Corne; the Husbandmen oft-times fearing and for bearing to fold their Land, lest their losse should be greater than their gaine. Surely, in my opinion, the very Boot-halers, or High-way-Robbers are more worthy fauour than such. For they are men of more generous spitis, both apt for seruice themselues, and to breed bold Souldiers for their Prince and Country, who, by good admonition, better imployments, or conscience of the sinne, are oft-times reclaimed: Whereas these Night-Rauens, for the most part, are base cowardly Knaues, neither fit for seruice, nor labour, a meere burthen to the Commonwealth:

wealth: and as incorrigible as sheep-biting Cūrres, which being once flesh't, doe feldome desist; vntill the bones or somewhat else doe happily choake them.



C H A P. VIII.

Of the Feeding of Bees.

Hree moneths of the twelue are rich and plentifull (in which the Bees gather abundantly, and store themselues for all the yeere) *Gemini, Cancer, Leo*; but *Cancer* is better than both the other. In *Virgo* and *Libra* they liue of their daily labour from hand to mouth: little increasing or diminishing their store; vntesse they fall into the hands of Robbers, and then, without reskue, they lose all. But in the other seuen, either wholly or partly they feed vpō that store, which the three rich moneths did afford them. For *Scorpio* hath but the poore gleanings of decaying plants: the three still moneths nothing at all. *Pisces* beginneth to put forth fresh plants, which in *Aries* and *Taurus* are well increased: but this breeding time the mouths are multiplied more than the meat, which * vnkinde weather oftentimes suffereth them not to fetch in. So that all this while, they, more or lesse, spend vpon the stocke: yea the weaker stalls somewhat longer, being not so well able to indure the sharpe aire: and therefore, for want of some store to feed on beuweene whiles at home, I haue knowne some die after Mid-*Gemini*.

For which seuen spending moneths, some swarmes are sufficiently prouided: which you may reckon as Jewels, the verie *Spes gregis*; whose increase the next yeere is certaine, if they be not ouer-hued. Some are not prouided for halfe the time: and these, as desperately poore, are not worth the

1.
In seuen moneths
the Bees spend of
the stocke.

* Rainie, cold,
and windie.

2.
Three sorts of
swarmes diuersly
prouided.

feeding. Others are prouided for six, or ffeue, or four moneths: which, by the helpe of feeding, may liue and doe well.

June
The first sort.

V.c. 3. n. 11.

The second.

V.c. 3. n. 63.

The third onely
are to be fed.

Stockes out of
profe never to
be fed.

July
Trie your
swarmes in
Virgo.
V.c. 10. p. 3. n. 2.

What quantitie
of Hony is re-
quisitie.

Of the first sort are timely prime swarmes vnbroken: also faire Castlings not ouer hiued, before Cancer; yea and in kinde or backward Summers before Mid-Cancer: when the black-berry-blossomes are not yet come, v. nor the hony-deawes gone: For such haue sufficient both company and time, to make sufficient prouision.

Of the second sort are the ouer-little and late swarmes, whose paucitie and pouertie makes them vnlustie to trauell for more, and vnable to keepe what is gotten or giuen them. Such are sure to bee put before winter be past, by cold and hunger, out of hunger and cold. And therefore if you haue omitted to saue such by Union; v. yet omit not to saue that little which they haue, and your vaine labour and cost in feeding them. v.c. 10. p. 1. n. 3. in III.

Of the third sort are the midling and indifferent swarmes, which by their earnest labour haue gotten well, and gathered good store of wealth together: but yet, for some want of number or time, the summer leaueth them in some want of prouision.

As for Stockes that haue stood two yeeres, and yet haue not sufficient stocke for these seuen moneths; (whether they be such as haue not gotten it, or hauing gotten it haue lost it againe) they are out of profe: and therefore fit to be taken, not fed. v.c. 10. p. 1. n. 3. in III.

But because vnkinde summers may make good swarmes but poore, as contrarily a plentiful summer may much mend the worst; after Mid-Virgo, when Bees are to be taken, v. it behoueth you to trie all your swarmes, by knocking and poising them: for the noise will tell you the greatnesse of the company, and the weight, their wealth. They that are vsed to poise them by hand, will resolute you readily in this point by aime: which till you know to doe, the Scales may direct you. For hauing taken the iust weight of the Hiue and all together, if the fore-knowne weight of the lecre spleered Hiue being deducted, there remaine not fiftene pound in all, to wit,

wit, for ffeue pound v. in Bees, the double weight in honie
and wax; that swarne is desperately poore, v. and fitter to
be taken than fed *. If the swarne with his store doe weigh
betweene fiftene and twentie, due feeding v. may saue him.
If betweene twentie and ffeue and twentie, hee is able to shift
for himselfe, and liue without helpe. If betweene ffeue and
twentie and thirtie, esteeme him as right good, plentifully
prouided euен for a hard winter, and fitter to be forward the
next spring †. And aboue that the greater the store is, the
better increase it promiseth. Vnlesse, in some extraordinarie
yeere, the H̄ue be cloyed with too much: v. for too much,
as well to Bees as men, doth oftimes more harme than
good.

* Yet they that haue but a small Bee-fold, and are content to be often
troubled (specially at the second feeding-time) may try those that lacke a
pound or two of this weight.

† And yet such though never so good, will perish neuerthelesse, if
they chance to lose their Queenes: v. which sometime happeneth to those
that are much troubled in the hewing. v. c. 5. n. 52.

v. f. inc. 5. n. 45.
v. n. 2.

v. n. 14, &c.

v. c. 10. p. 1. n.
3; in VII. &
VIII.

v. c. 1. n. 6.

Moreover, because a long winter and a rough spring fol-
lowing, with some other accidents, may waste them that
were good, as, on the other side, a short winter and a milde
spring may helpe those that were scantily prouided; it shall
not be amisse to try againe in *Pisces* or *Aries*, those that you
suspect; and to feed them if you see cause. v. n. 15. & 16.

9.
*Try againe in
Pisces or Aries.*

*Feb for
March.*

THE naturall food of Bees is Honie: for want, or for spa-
ring whereof, many other things haue beeene devised.
Aristotle mentioneth Figs, and all such sweet things. *Api-*
ary siccus ac reliqua id genus dulcia in cibum apponunt. And
Plinius, speaking more particularly, commendeth Raislings,
and Figs, and teased Wooll, wet in sweet Wine made of
Raislings, or new Wine boiled, or Hony-water. *Sic cibus deesse*
conseatur apibus, avas passas siccavæ, ficosq; tufas ad fores ea-
rum posuisse convenient, item lmas tractas madentes passo aut
defructo, aut aqua mulsa. And some of our Country-men haue
practised to giue them Bay-salt, Bean-flower, Ground-
mault, rosted Wardens, and Apples, and sweet Wort. All

10.
The Bees food.

hist. 1. 9. c. 40.

Nat. hist. li. 21.
c. 14.

which things, though they will spend; yet cannot they be preserued by them without Honie.

Touching the counsell of Plinie, this is to be noted, that if you place their food *ad fores* before the doore, it will draw strange Bees vnto them; whereby the liues of the one, and the goods of the other will be indangered: if you place it abroad from your Hiue, then will it be common: and if within vpon the stoole, which is best, then must you remoue it a time, or keepe it close: v. otherwise it will be no better for them, than if it were set *ad fores*. And as for the deuice of teased Wooll, it is a fitter meanes to catch Bees, than to feed them. For if the liquor be aboue the Wooll, it will lime the wings of many; if not, many will be intangled in the small haires, as Birds in a grin. Cover it therefore with a linnen cloth, so that the Bees may not creep betweene.

Private feeding.

The manner of feeding Bees in their Hiues is diuers. Some give them Honic in a spoone: but that way many of them be-smeare their wings: and if their fellowes likke them not cleane presently, before the cold chill them, they die. Others, to auoid this inconuenience, giue it them in a warme Toste: but this way wasteth the hony, & doth not altogether auoid the former inconuenience. Others haue other deuices. But indeed the only good way to feed Bees is with a combe, after this manner. First, take a fresh Combe of Liue-honie out of a Hiue, & lay it vpon some Prop or stay, that the Bees may worke, as well vnder as vpon. This Prop may be a woodenne grate scuen or eight inches square, made of two sides halfe an inch deepe, and three ribs fastened into them with Douetailles, or with small nailes. For a need two seuerall square stickes may serue: but then you cannot so quickly either set it in, or take it out.

Then in a faire calme euening (when the heat of the day, and the Bees worke is past) place this vpon the stoole: so that the Feeding-combe be reared as neare the Hiue-combes as may be, not touching them, lest the Bees fasten this and them together. Then see that the Hiue, set downe in his place, be close cuerie where: and at the doore but roome enough for a Bee or two to passe. Then will these Bees to worke afresh, not ceasing day nor night vntill they haue rid the Combe cleane: which within eight and fortie houres will be effected. If they need any more, the next euening doe likewise.

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Of the Feeding of Bees.

C. 8.

12. Likewise. But alwaies when it waxeth darke, and the Bees are all in ; barre vp the doore ; and let them not out till the next euening, when other Bees are quiet. Or if you doe it in the morning, be sure also to take out the Combe, whether he be rid or no. And still leaue the Hiue close, with a narrow passage.

If your poore Bees should not be thus defended from strangers , the feeding of them would proue a staruing of them. For the Borderers smelling the bootie will be sure to haue part of it, if they can come at it : and when that is done, they will set vpon the other, and so spoile all : as often it falleth out through this carelesnesse. Which causeth some to condemne all feeding of Bees, as painfull and fruitlesse : saying, If you feed them not, they can but die : and so will they doe when you haue bestowed your labour and cost. But this is disrowned by experiance: for those, which being fit to be fed v. are thus fed, do seldome miscarrie. That summer they prouide sufficiently for winter, and the next they are as likely to swarne and be fat as an other.

13. You may also feed your poore swarmes together, (if you haue no neighbour-Bees to beguile them) by setting any re-fuse-honie or leauings abroad in your Garden , hauing first barred vp those that need it not. This feeding-Hony, as that which is stolne , when they haue first taken their refecion, they conuey into their void Cells : which, because they can not now shut them vp, as before *Virgo*, for want of wax ; v. they doe but halfe-fil. And therefore they first spend of this late gotten hony, reseruing that, which was more safely laid vp, vnto the last.

14. It is good to feed Bees before they need : (that they may saue their store, which they haue slaut vp in their Cells, vntill the spring) namely, in the later part of *Virgo*, when the Combes are taken, v. or in *Libra*. For those that haue spent their owne store, and haue little or nothing leaft in the end of Winter, are so discouraged and so feeble with fasting ; that knowing their thin bodies can beare out no cold, they wil not come abroad, but when they are fed : vniuersle the weather be exceeding warme and calme : and the more they keepe in, the weaker

*Carelesse feeding
is staruing.*

V. n. 52

Publike feeding.

V. c. 6. n. 152.

*The first time of
feeding.*

Aug
V. c. 10. p. 1. n. 2. Sep

Aug
V. c. 10. p. 1. n. 2. Sep

weaker still they are, and leesse apt to breed. But those whose rath feeding hath caused them to spare their store till the Spring, will be as cheeresfull as the best: in any reasonable weather they will abroad, and fetch in that fruitfull *Ambrosia*, which causeth them presently to increase and multiply.

v. c. 4. n. 12.

At this first time therefore first finish the publike feeding: and then begin the priuate, specially of those that are vnder eighteene pound: to which if you giue now the better part of their due allowance; you may supply the defects of them, as also of the rest, at the second feeding-time, when their need will better appeare.

* Their due allowance, first and last to be giuen them, is so much at least, as the swarne with his store lacketh of twentie pound. v. n. 8.

Feb. or ^{13.} The second time
March. of feeding.

In *Pisces* or *Aries*, as soone as the weather is warme (not before, lest the cold chill them in their worke) if you feare they will lacke (which you may perceiue by their lightnesse & vnwillingnesse to come abroad) supply their want againe, and againe, if need be. But in this second feeding, for lacke of a Hony-combe, take a drie Combe, reserued for the purpose, and poure thereon so much Honie as it may receive. If you thinke it be not liquid enough; then either warme it first ouer the fire, or else spread it all ouer the Combe with your finger, that it may sinke into the Cells: (for which purpose Liue-hony is best) then vse this honied combe as the Hony-combe. v. n. 11.

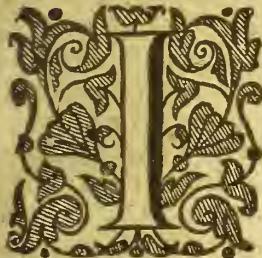
April. ^{16.} The third time of
May. feeding.

If either these fed Bees, or any other, chance afterward to lacke (namely in *Taurus*, or somwhat before or after) then feed them daily vntill mid-*Gemini*, giuing them, euerie euening or morning betimes, a spoonfull of Honie; and taking away the Combe againe before other Bees be at worke. But this is to be done without intermission: for the Bees will duly looke for it, and languish, if once or twice they lacke it.

If you vse to knocke the Hiue, when you put in the Honie; they will come downe together, like sheepe to a call, when they are to be fodered.

By this meanes I haue saued swarmes that forsooke their Hiues for hunger, hiuing them againe in their owne Hiues: which proued good the same yeere.

C H A P. IX.

Of the remouing of Bees.

N remouing of Bees be carefull to auoid these ffeuills : 1. hindering of their swarming : 2. and of their Hony-gathering : 3. breaking of their Combes : 4. robbing : 5. and losse of Bees.

1.
Fine things to be
auoide in re-
mouing Bees.

Remoue alwaies in a faire day,
and, as neere as you can guesse,
in settled weather. For when they

2.
Remoue alwaies
in faire weather.

are moued to another place, if it be within their circuit or walke ; they will flic to their old standing as soone as they are let goe, and hanker about it three or foure daies, and sometime longer : where if the cold wet catch them, many lose their liues. And if you remoue them out of their knowledge, then, as amazed in an vncouth place, they flic about for a while viewing the countrie, and searching for their old home : when they are wearie , they rest wheresoeuer : and if foule weather come vpon them, they are in like danger.

For the time of the yeere, remoue not in the three stille moneths, or in a fortnight afore or after, for losing the Bees. For if foule weather fall not, the very stille cold will kill many, while they are straying abroad : and of those that returne, beeing not yet acquainted with the Hiue doore, some will fall short, some vpon the Hiue: where, while they rest panting, the cold chilleth them.

3.
Not in Winter.

Taurus, Gemini, and especially Cancer , are naught, for hindering the swarming , as well as their hony-gathering: and Cancer for danger also of breaking their soft Combes.

4.
Not in Summer.

In Leo though the swarming time be past , and robbing time not yet come ; yet there remaineth some hony-gathering,

T

ring,

April
May
June
July.

ring, and the Combes being then most weightie and most weake, the danger of breaking them is greatest.

aug^t
v. c. n. 31.

To remoue in *Virgo* (whenthe Bees doe euer vse to be trying of masteries) v. is dangerous for robbing. For the *Indigene* or old inhabitants of the Garden (as they goe about prying for booties) finding new neighbours coine among them, will be sure to visit them: and while the chiefe of their strength is stragling abroad, seeking for their old dwelling; they will bring the rest such cheere to their housewarming, as shall haply make the house too hot for them. And then they must be faine to goe along with them, and helpe to carrie their owne goods after them. v. c. 7. n. 42.

Sep^r
Oct^r
March
Feby

5.
The Autumnne
and Spring are
fit time for re-
moving.

The fitteſt time is either in *Libra*, and the fore-part of *Scorpio*, that they may throughly know their new ſtanding before the weather be too cold; or in *Aries*, and the later part of *Pisces*, that they may be acquainted with it before much gathering of Honie.

Neuertheleſe, if you haue Bees in other mens keeping, whose care and ſkill you miſtruct; you were better to remoue them vnſeasonably with ſome loſſe, than to hazard all by their ignorance and negligence.

Sep^r

6.
Libra, the beſt
moneth in all the
yeare.

7.
When to remoue
a ſwarme.

8.
The time of the
day, and manner
of remouing.

But if you may choose, remoue in *Libra* onely: which is ſimply the beſt.

And for the remouing of a ſwarme into an other Garden, (whether it be neere or far off) the only time is the euening or night next after the hiringe: that he may be at his new ſtanding, readie to worke, in the morning; and ſo loſe no time, nor breake his first Combe in the carriage.

TN the euening, when you mean to remoue, an houre before ſun-set prop vp the Hiuе from the Stoole, with three Bolsters two or three inches thicke, that the Bees may ascend from the Stoole. About halfe an houre after, hauing prepared an other Stoole of the ſame height, and couered it with your Mantle, ſo, that the middle of the mantle be ouer the middle of the Stoole; moue the stall with his Stoole, if you may, a little aside; and ſet this couered Stoole in his place: or if it cannot well be moved, then ſet the couered Stoole close

to the old stoole, either beside it, or before it. This done, lift vp the stall from his old stoole and set it vpon the new: and then wiping the Bees from the old stoole (if any remaine) with your Brush; either take the stoole away, or couer it with a cloth. And then if your new stoole be onely a planke without legs, borne vp by some other meanes; it is good to set it vpon the old. Within a while when the Bees are all in, knit the mantle at the foure corners ouer the top of the Hiue, so as the knots may not slip: and presently binde it to the Hiue about the middle slackly with a small line, and wrest it fast with a little sticke. And so is the stall readie to be remoued.

They vse commonly to make no more adoe, but after sun-set when the Bees are at rest, to lift vp the stall, and set it vpon a mantle spread on the ground, and so to binde it vp, leauing the Bees vpon the stoole (which in a good stall are not a few) behinde them. Which way, for such stalls as haue all their Bees vp in the Hiue, may serue well enough.

The best way to carrie your * Stall is vpon a Cowl-staffe betweene two.

* If you haue many to remoue; two lustie fellowes may beare two or three of them at once: but let them be all fast bound together.

If it be light, one may carrie it in his hand. But, howsoeuer, be sure it hang perpendicularly for feare of breaking the Combes; specially if you chance to remoue before Libra, when the wax is soft, and the lower parts of the Combes are heauie with Schadons, as well as the vpper with Henie.

When you haue brought the Stall home, you may let it stand bound as it is, all night in the house. The morrow, when the weather serueth, set him on his seat: but if it be foule all the next day, keepe him still bound vntill it be faire. And then hauing loosed the line, and taken away the Mantle, cloome him vp presently: leauing, for three or foure faire daies, a verie narrow entrance, for feare of robbing. For their new neighbours, euen now also (though not so eagerly as in Virgo) will proue them: and they will not so stoutly resist, vntill they be acquainted in the place.

9. The usuall manner of remouing.

10. Which is fit for poore stallies.

11. How a good stall is to be carried.

12. How a bad.

Sept-

13. What to do when they are brought home.

14. And what when they are seated.

CHAP. X.

Of the fruit and profit of Bees.

Wherein is shewed first the *Vindemiation* or taking of Combes: secondly, the trying of the *Wax* and *Honic*, with the making of *Meth* or *Hydromel*: and thirdly, the singular vertues of them, for the vse and comfort of man.

The first part of this Chapter sheweth the taking of the Combes.

Aug^t
An^r
Sep^r
1.
The first kind of
Vindemiation.

2.
The best time for
Killing Bees.
1.

Coll. 9. c. 15.

2.

Sept^r

3.
What Stalls are
to be taken.

V. c. 4. n. 3. 1. &

32.

1.



He most vsuall, and generally most vsefull manner of taking the Combes, is by killing the Bees. For which the naturall and seasonable time is the latter part of *Virgo*, from the end of the *Dog-daisies* vnto *Libra*: because till then the Combes are full of Schadons, which deceiue the Honi-men, making the Hiue heauier and the Honie worse: (for the young Bees as well as the Coome corrupt the same, *Pulli & rubra sordes sunt mali saporis, & succo suo mella corrumpunt*) and after that time, the weather waxeth colder, not so fit for the running and working of the Honie: and the Honie is likely to decrease, either by their owne spending or by the spoiling of Robbers. Except in the heath-countries, where their gathering lasteth longer: for there they defer their taking vntill Mid-*Libra*.

At this time therefore consider with your selfe what Stalls you will kill. Swarmes that may liue, yeerlings and two yeerlings that are in proofe, keepe for store. Likewise those that rid their Drones betimes, and specially those that draw out their young Cephens. v. Those of three or foure yeeres, which, by reason of their not swarming this last summer, are ful

full of Bees, lightly are fat, and therefore worth the taking: but they are also good for store, vnlesse the frequent Honidewes haue made them ouer fat. But those of that age which haue cast twice (except they were very forward and had beat away their Drones betimes) are not likely to * continue: and therefore are to be taken.

* If you would haue any such to stand an other yeere, and not to bee weakened by his late castlings; put it backe into the stocke againe. *v.c.5.n.11.*

Likewise all poore swarmes vnworthy to be fed, v. and all light stocks whose stocks are decayed: v. For they will surely die. Neither is it safe to trust any after they haue stood fve yeeres: vnlesse it be some speciall kinde of Bees, which cast often, and yet beating away their Drones betimes, doe still keepe themselues in heart. For such I haue kept nine or ten yeeres: and I haue heard of some of a greater age. Moreouer, all stalls of three yeeres old and vpward, that haue mist swarming two yeeres together: and especially those, that hauing lyen forth the summer before, did not cast this last summer: for such doe seldom after prosper. It is therefore better to take them now while they are good, than in a vaine hope of increase, to keepe them till they perish. Likewise if you haue any that are very fat and full of Honie, (as some yeeres some will be, euen downe to the Stoole) those are ripe and ready to yeeld their fruit. One such is worth three or four. Take them therefore in their season: For wanting roome to breed in (their Cells being full of Honie) they will decay by little and little, and consume to nothing. And therefore, as in a wet hungry yeere you must keepe the best; so in a drie yeere, rich and plentifull in Honie-dewes, the worst are like to proue best for store.

But generally take the best, and the worst. *In medio virtus.*

And euer suspect those that rid not their Drones in time, v. *v.c.4.n.30. X.*

Also those which the Robbers doe eagerly assault, v. *v.c.3.n.50. XI.*
and if their Combes bee once broken, v. delay not their *v.c.7.n.46.*
taking.

Having made choice of your Stall to be taken, some two or three houres before * Sun-set dig a hole in the ground, as neare the Stoole as may bee, about eight or nine inches

T 3 deepe,

^{4.}
*The manner of
killing Bees.*

II.

v.c.8.n.4. III.
v.c.8.n.6. IV.
V.

VI.

VII.

VIII.

IX.

v.c.4.n.30. X.

v.c.3.n.50. XI.

v.c.7.n.46.

deepe, and almost as wide as the Hiue-skirts: laying the small earth round about the brims. Then hauing a little sticke slit in one end, & shrift at the other, take a \dagger Brimstone-match 5. or 6. inches long, and about the bignesse of your little finger, and making it falt in the slit, sticke the sticke in the middle or side of the hoale; so that the top of the Match may stand even with the brim of the pit: and then set another by him drest after the same manner, if that bee not sufficient. When you haue fired these Matches at the vpper ends, set ouer the Hiue: and presently shut it so close at the Skirts, that none of the smoake may come forth. So shall you haue the Bees dead and downe in lesse than a quarter of an houre.

* That you may haue the euening and morning to finish your worke; while the store-Bees be at rest: which otherwise will trouble you in handling the Honie, if by any meanes they may come at you. But if the weather be cold enough to keepe them in, or the house bee close enough to keepe them out; you may take what time of the day you please.

\dagger Matches are made of linen rags and Brimstone, after the manner that maides make Sluts. First, melt pounded Brimstone: then take a linen rag a foot long, and holding both the ends in one hand, dip the rest in the melted Brimstone, turning it vp and downe with a sticke: then taking one of the ends in the other hand, winde it a little; for hard winding makes it burne the worse. This cut in the middle maketh twaine.

6.
Sundry meanes
to kill Bees.

Next vnto Brimstone is the smoake of Bunt or great Puffists, Tuchwood, or Mushrooms, vsed in like manner: but they are neither so quicke, nor so sweet. And for a need, some smother them with danke Straw, or Hay: but then the Honie will smell of the smoake. And therefore some drowne them in a Tub of water: but that hurteth the Honie, and doth the Hiue no good: and, besides that, many of the Bees being not quite dead, will sting them that handle the Honie.

6.
The Bees being
dead, haue the
Hiue.

The Bees being dead, carrie the Hiue into the house, &c. See Part 2. If any Bees escape, they will die that night: but if you feare they will doe any harme, you may kill them presently vpon the Stoole.

7.
The second kinde
of Vendemiation.

A Nother way to take the Combes is by Driuing the Bees. The manner of it is this. At Mid-summer, or within two, or three daies after, in a faire morning an houre before Sun-rising,

P. 1. *Of the fruit and profit of Bees.*

rising, lif the Stall from the Stoole, and set it vpright and fast on the ground in a Brake v. with the bottome vpward: and quickly couer it with an empie Hiue, hauing first laid two spleets vpon the full Hiues bottome, that the empie Hiue may stand the faster. Then wrapping a Mantle v. round about the Chincke or meeting of both the Hiues, and binding it fast with a small cord aboue and beneath; that a Bee may not get forth, clap the full Hiue or *Remouer* round about a good many times, pawling now and then a little betweene, that the Bees may ascend into the void Hiue. And when you think that most of them are driuen vp (which will bee about halfe an hour after) set the ypper Hiue or *Receiuer* vpon the old stoole: B V T bee sure &c. as it followeth note 15.

Prouided alwaies, before you goe about this busynesse, that all the Sralls in your Garden be first shut vp, lest they trouble you and your poore Bees.

This kinde of taking is much applauded at the first, because men thinke thereby to saue both Bees and Honie: but it falleth out with them as it is in the Prouerbe, *All conet, all lose.* For the Honie is neither so good, as being not yet in season, and to bee corrupted with the Schadons, v. which can hardly be cleane taken from it; neither so much by almost the one halfe, sith there remaine yet six or seuen weeekes of Honie-gathering.

And the Bees, as men forcibly driuen from their goods and children, are so discouraged, that they seldom thrue after it: specially those that haue swarmed; seeing their compa-
nie is leaft but small, and the after-brood is destroyed, which should haue supplied the roomes of them that are gone. And as for those that haue not cast, they might after that time yeeld a swarne, which would be better than the whole stall being driuen: and if they did not swarne at all, they would bee so much the better, either to take for Honie, or keepe for store. v. c. 5. n. 22.

This Driuing of Bees into leere Hiues being nothing so profitable as it seemeth, I doe rather commend vnto you the Driuing of onestall into an other: whereby the fruit of one

C. 10.

8.

The time and
manner of Dri-
uing Bees.

v. c. 5. n. 24.

v. c. 5. n. 48.

9.
This driuing of
Bees unprofita-
ble.

10.

The Honie taken
is little and
naught.

v. n. 2.

11.
And the Bees
driuen; few and
poore.

12.
Another kinde
of driuing

is.

Aug.
Jan.
Feby.

13.
At two times.
V. n. 2.

Aug.
-

14.
1. Driuing in
Virgo.
V. n. 3.

15.
The manner of
driuing in Vir-
go.

V. c. 5. n. 24.

istaken, and the liues of both are sauved together.

And thus some are to be driuen in the latter part of *Virgo*, when they haue done breeding; *v.* and some in *Aquarius* or *Pisces*, before they begin to breed againe. *v. c. 4. n. 12.*

In *Virgo* such stalls onely are to be driuen, as are fit to bee killed: *v.* and that into yeerlings or two-yeerlings, which that yeere haue cast twice, and therefore haue few Bees least in them; but yet haue Honie enough. The manner of it is this. Hauing first placed these two stalls, the *Remouer* that is driuen and the *Receiver*, as neere as may be one to another, and so let them stand together six or seven daies, till they be well acquainted with their standings; when you see the weather faire and constant, late in an euening, about ten a clocke, set the *Remouer* fast on the ground in a Brake, *v.* with his bottome vpward, and the *Receiver* vpon: and binde them close together, as in the former driuing. And then, by often clapping the *Remouer* betweene your hands about the space of a quarter of an houre (now and then pawsing betweene) hauing driuen most of the Bees into the *Receiver*, and so mingled them all together; let them so stand til the morning: In the morning about Sun-rising, if the weather bee faire; (otherwise you must stay * longer) doe the like: hauing first shut and couered the other stalls. *v. c. 5. n. 25.*

* If the weather fit not the next day, you may safely stay till it doe fit; so that no Bees get forth in the meane space.

This done, set the *Receiver* vpon the *Remouers* stoole: *B V T*, be sure to bolster him vp with three Tile-shards, that the driuen Bees may easily get into the Hiue on every side. And then knocke the *Remouer* downe vpon a Table two or three foot square, set close to the forepart of the stoole: and, by clapping of the Hiue, presently get as many of the Bees forth as you can. And forthwith carry the *Remouer* about a Pearch from the stoole: and there laying him downe, so that the Combes may lie edgelong, after a little while clap him twice or thrice, which will make many of the Bees to fly forth. Then remoue him to another place about the former distance, and there doe likewise: and so to an other, and an other, vntill few or no Bees will come forth by this meanes.

And

V. note d.

+

And euer when you be come to a new place, and there haue got out some Bees ; leaue there the *Remouer*, and goe directly to the *Receiver*, and a little beyond : for the Bees will follow you, and thereby the sooner recover the *Hiue*.

After this, hauing remoued the *Receiver* againe, and laid him with the *Combes* edglong as before ; stay till you see the Bees ascended to the highest part of the *Combes* in the Skirt of the *Hiue*: and then resting it on the edge of a *Kiuer*, and turning the Bees toward your readiest hand ; with two or three claps force them out into the *Kiuer* : and then suddenly carry the *Hiue* to an other place : and when you see more Bees ascended, haue it backe againe to the *Kiuer* , and there clap them out as before. This iterate as often as you see any store arise vnto the vpmost part of the *Hiue*-skirt. Which when they cease to doe, the *Hiue* is well nigh rid of his Bees. Betweene whiles, carrie the *Kiuer* to the stall, and knocke out the Bees vpon the Table. Then, hauing first loosed the spleets ends, take out the *Combes*, beginning at one side : and euer when you haue taken out a *Combe*, wipe off the Bees with a fether of a *Goose* wing into the *Kiuer* , and send it in, out of their sight. When the *Combes* are all gone, set the *Hiue* and *Kiuer* before the *Receiver*, that the Bees may take vp your leauings. As soone as they begin to bee quiet, take away the *Bolsters* , and cloome vp the *Hiue* very close, leauing the doore no wider than must needs bee. And when all is done, set open your other stalls : and carry the *Hiue* and *Kiuer* from among the Bees.

If you thinke there be not sufficient prouision for this double Stall in that single *Hiue*, bestow a full *Combe* or twaine, v. as need requireth, of the *Remouers* vpon them : and thus will your Bees delight and prosper in new Wax, which in old corrupt *Combes* would decay.

In *Aquarius* or *Pisces*, when you haue poised your *Hiues*, those that you finde by their lightnese, vnlikely to indure the Spring for lacke of food, you may in like manner drue into such prouided Stalls, as haue fewest Bees : and so will those *Receivers* be much the better, and cast both the rather, and greater *Swarmes*. And if by chance, at any time after,

16.
*How to helpe
those druien
Bees that want
V. c. 8. n. 1. 1.*

17.
Driving in Pisces. *Januor
Feby.*

you finde a Stall decayed, thus may you saue them. Otherwise, if he be fit to be fed (v. c. 8. n. 5.) feed him, v. c. 8. n. 15. and 16.

18

How to reviue
those that are
chilled in driving

P. 6. 7. n. 63.



If the weather being not warme, you finde some Bees chil-
led about the Hiue; fill your warme hands full of them, and
anonethey will flic away to their fellowes. v: And if hap-
ly any chance to pricke you, (which they will seldom doe)
your hand will haue the more vertue to reviue the rest.

This driving will not bee so troublesom as the former,
because the poore Bees will easily change their hungry
home for a place of plentie.

19.

A third kind of
Vindemiation.

20.

Exection vised
at two times.

Exsection or Castration, is a third kinde of taking: which
is the cutting out of part of the Combes, part being least
for the Bees prouision. And this was to be done at two
times in the yeare, * *In ortu, & occasu vergilarum.*

* *Vergilarum ortus* after *Columella*, l. 9. c. 84. is the eight and fortieth
day from *Aequinoctium vernum*: after *Var.* the fourte and fortieth: but then
you must understand that they accounted the *Aquinum* to bee in the
eighth degree of *Aries*: (although *Hipparchus*, as *Columella* saith, had then
found it to be in the fift.) With vs the Cosmical rising of *Vergiliae* or *Plie-
ades*, being seuen starres in the necke of *Taurus* and in the fourte and twen-
tieth degree of that signe, is knowne to be in the third of May, the hie
and fiftieth day after the true *Aequinoctium*: which sumpeth with the ac-
count of *Columella*. And *Vergilarum occasus*, being in the same degree of
the opposite signe, is vpon the fift day of *November*.

21.

What part to be
exected is un-
certaine.

I. 9. c. 15.

But what part is to be taken, and what least, I finde it not
determined. *Priore messe* (saith *Columella*) *dum adhuc rura*
pastionibus abundant, quinta pars favorum; posteriore, cum
jam metuitur hyeras, tertia relinquenda est. But *Varro* then
requireth for their store two third parts; *Vt ne plus tertia pars*
eximatur mellis, reliquum hyemationi relinquatur. And *Ari-
stotle* because (as *Columella* granteth) *bis modus non est in*
omnibus regionibus certus; doth not prescribe any certaine
part, but leauing it to the discretion of the Bee-master, saith,
Cum favos apiarum eximunt, cibi taantum relinquant, quantum
*per hyemem sufficiat: quod si satis sit, servatur examen; si mi-
nus, vel moritur ibidem, (si ne discedat hyems obsteret) vel des-
erit sedem, si serenum nanciscitur.*

Hist. an. 1. 9. c.

40.

This

This way of taking, as appeareth, was anciently vsed in plentifull Countries, as *Grecce, Sicily, Italy, &c.* But the former exection, to wit, in the Spring, Aristotle no where mentioneth: and surely it must needs doe more harme than good, seeing the Hives are then full of Schadons, which being spild, spill their swarming; and the store of Honie, which they secke for, is then well spent.

And that also in the Autumne (which yet is the fitter time) seemeth no leſſe vnprofitable than troubleſom: because the Bees, in the Spring following, if they lacke not Honie to liue on, yet ſhall they lacke Cells to lay their young in, whereby their breed will bee hindered. And at neither time can it be done without much ſpoile of Bees.

But howſoever it faid with them, for our Country I take it to be verie vnsifting. And therefore I ſay the leſſe of it: referring the curious Reader vnto the fifteenth Chapter of the ninth Booke of *Columella*, and vnto *Georgius Pictorius*, who in his fourteenth Chapter writeth thereof at large.

The ſecond part of this Chapter ſheweth the trying of (1) Honie and (3) Wax, with the (2) making of Meth or Hydromel.


HE Hiu being houſed, v: ſquat it ſoftly againſt the ground, vpon the ſides, not the edges of the Combes: and looſing the ends of the Spleets with your fingers, and the edges of the Combes, where they ſtickle to the ſides of the Hiu, with a woodden Slice; take them out one after an other. Then hauing wiped off the halfe-dead Bees with the Feather of a Goose-wing, breake the Combes preſently, while they are warme, into three parts: the firſt ſheere Honie and Wax, the ſecond Honie and Wax with Sandarach, the third dry Wax without Honie. And that they may breake right where you would haue them, marke the places deeply with the edge of your knife. But firſt prouide neceſſarie Instruments, as Panns, Kiuers, Tongs, wide Sieues, or Wheat-ridders, a Slice, Kniues, Straining-bagges, a Tub or Kieue, with a Tap, and

V. p. I. n. 6.

The Combes to be diuided into three parts.

^{22.}
Exection ancient, but not profitable.

^{23.}
Neither firſt.

^{24.}
Nor ſecond.

^{25.}
Specially for our Country.

^{2.}
Necceſſarie Instruments being firſt prouided.

Tap-waze, a hairen Clensieue,* Honie-pots, Wax-moulds, Meth-barrels, &c.

* Treene vessels, if they leake not, are better than earthen: which if they breake not by some mischance, the verie force of the Honie is able to cracke.

These things prouided, take out the first Combe: and setting the Honie-end in a Ridder, resting vpon Tongs ouer a cleane Pan or Kuer that will not leake; marke and breake off the first part for Honie, and leaue it there: then goirg to the Kueue fittid with a Tap and Tap-waze, marke and break off the second part for Meth or Hydromel, and leaue it there: and lay the third part aside for Wax. Then taking out an other Combe doe the like, &c. till the Ridder be full.

If you meane to make two shoothes, and so two sorts of Honie; let your assistant presently cut the first part into thin slices, and, without any more adoe, let the Honie runne his first shoothe. But this is to be vnderstood of the daiker part of the Combines: for the pure white Cells in the vpper part (which containe nothing but pure white, or yellowish Liue-Honie) you may as well crush betweene your hands: and this will be fine ordinarie Honie.

But if, for some speciall vse, you would haue some Honie yet more fine and pure; then onely slice the purer part of the Combines, being yet warme with the temperate heat of the Bees, and so let the pure Liue-honie runne through a cleane Clen-sieue. For, *In omni melle quod per se fluit, (ut mustumoleumq.) appellaturq; aceton, maxime laudabile est.* Of all Honie that which runneth of it selfe, (as new Wine and Oile) and is called * *Aceton*, is most commendable.

This *Aceton* or finest Nectar, for his incorrupted puritie, is called Virgin-Honie. *Quod è favis sponte primum defuit, virginicum mel vulgo appellatur.* Plantius in Fernel. l. 7. de Meth. Med.

Whereof there are two sorts. The right Virgin-honie is of a Swarne: v. that which is of an old Stall, though it runne first and of it selfe, and were gathered the same yeare; yet being partly mixt with other, and laid vp in corrupter vessels, not in the pure Virgin-Cells, v: is but a second or bastard

3.
The dressing of
the first part for
Honie in two
shoothes.

4.
The first shoothe
for fine ordinary
Honie.

5.
O: for Virgin-
Honie, which is
most fine.

Nat. hist. l. 11.
c. 15.

6.
Two sorts of vir-
gin honie.
V. c. 6. n. 29.

V. s. 6. n. 14.

bastard Virgin-honie, rather to be called the finest ordinary.
v: c. 6.n.30.

* *A cæton without drosse or dregges.* For *κάτως* doth properly signifie *Cubile a Bed*, and is here vsed for Dregges, because the Dregges of Wine and Oyle and such liquors, are as a Bed or *Ground* whereon they *lye*: in which respect we also call them *Lees* or *Grounds*. But this Metaphor to the Dregges of Honie is somewhat Catachrestical: because the Honie beareth his Drosse, and not the Drosse the Honie.

But the hard Corne-honie v: in the top of the Combcs, specially if there be any store, because it will not runne, you must either wash into the warme Meth-liquor; or melt it with the Cells on a soft fire, or in a hot ouen, or in *Balneo Mariae*, v: and so shall you haue the Honie by it selfe, and the Wax swimming aboue it: which you may take away when it is cold. But so this good Honie will become but course: and therefore put it to the second shoo.

Hauing now taken so many Stalls as you can dresse this euening, v: take the rest as soone after as you may, v: and let the Honie be all tryed out, before you soake the second part.

The Hives being rid, carrie them into your Garden (a Pearch at least from any Stall) for the Bees to take vp your leauings: v: And haue still by you a paile of faire water to wash your hands in: which water must be for the Meth.

When the Honie hath runne what it will; put this first shoo, whether it be ordinarie or Virgin-honie, into a picked bag, to straine it into his pot by it selfe. And let the reminder bee crush with warme hands that it may runne againe for a second sort, which is likewise to be strained. That which is least at the last, in the Bags, Rdders, and else-where, wash into the second shoo of the Must v: to give it his iust strength.

The weather being not warme, set the Honie by the fire to helpe the running.

Otherwise if you be in haste, and meane to make but one sort of Honie; first slice off the vpper part of the Combe (even as much as you finde void of Sandarach) for Honie: and presently let your assistant wrike all together with warme hands, and so make but one shoo, which afterward

7.
Corne-honie got out by water or fire.

V. c. 6.n.27.

¶ 28.

V. p. 3.n.7.

V. * in p. 1.n.4.
V. Ibidem.

V. c. 8.n.13.

8.
The second shoo for course Honie.

V. n. 17.

9.
The dressing of the first part in one shoo.

is to be strained, v: Then going to the Kiue, slice off the second part (euen all that hath Honie) for Meth. And set aside the drie part for Wax. And thus will your Honie be good enough: and such as, compared with the vulgar Honie, may well goe for fine.

10

The vulgar Honie grossly handled.

For the Honie-men (because thus to cut each Combe into diuers parts, and diuersly to dresse each part, would be too tedious to them that haue much to doe) doe vse to make but oneworke of all; with a thin light shouell pounding and compounding the Honie, and Wax, and Bees, and Schadons, and Sandarach all together. And then putting this confused stiffe into a strong hairen Bag, doe with a Presse or Wrange violently wring out all that will runne. And this, hauing first his season of heat ouer the fire, they put vp into barrels or other vessels to worke: whereby though it bee much purged, yet can it not choose but participate the nature and taste of those things wherewith it was so thoroughly infected. This done, the Pulser remaining in the Bagge they slice with a shredding-knife into a Trough or other vessel, and all-to-wash it and mash it in faire water for Mede: which, when the sweetnesse is all washt out, being crushed dry, the balls they try for Wax.

11.

The working of Honie, and how to helpe it.

Honie being put vp warme into pots, will in two or three daies worke vp a skum of Wax, Honie, and Drosse together: which being taken off with a spoone, put to the second part. In cold weather the Honie will not worke well without the heat of the fire. The best way is to put it into an ouen after the batch is forth, but not before you can abide to hold your hand vpon the bottom, for feare of ouer heating the Honie. The next way is to stirre it in *Balaeo Maria*, v: till it be all warme.

V. p. 3. n. 7.

12.

Diuers Countries yeeld diuers kinds of Honie.

P. c. 6. n. 3. 10.

The differences and degrees of Honie in goodnesse, are as well naturall as artificiall. For as it is made better or worse by the ordering and handling of it; so is it in it selfe better or worse, according to the different condition of the soile where it is gathered. v. The Champian-honie is accounted almost twice as good as the Heath-honie, although they bee ordered both alike. For when the vulgar champion is sold for

for nine pound the Barrell, the like Heath-honie will scarce yeeld fwe. And generally the finer the Wheat and the Wooll is, the finer is the Honie of the same Region: v. and therefore no maruaile that the course Heath, hath as course Honie as Wooll.

V. p. 3. n. 4. &
c. 6. n. 31.

Good Honie, when it hath wrought, hath these properties whereby it is knowne: It is cleere, odoriferous, yelow like pale gold (but right Virgin-honie is more crystalline at the first, v.) sharpe, sweet, and pleasant to the taste, of a meane consistence betweene thicke and thinne, so clammie, that being taken vp vpon your fingers end, in falling it will not part, but hang together like a long string, as that vseth to doe which is clarified. So doth *Iacobus Sylvius* describe the best honie. *Mel optimum sit purum adeo ut totum perluceat, odorum, flavum, acerrimum, dulcissimumq; gustanti, & jucundissimum, consistentia nec crassa nec liquida, sed tam sibi coherens ut continuatorem suam, quasi linea longissima, non intercissum servet, si digito attollitur: idem coquendo paucam spumam emittit.* And *Guil. Plantius*. *Mel prokum est quod inter crassissimum & tenuissimum, sit mediocre, sapore dulcissimum, & acer- rimum, simulq; dulcedinis sensum inferens & vellicatu pungens lingam, colore pallidum aut subrutulum, & pellucidum, odora- tissimum & recentissimum, quodq; sublatum non facile ob sequa- cem lentrem abrumpatur, pondere grave, & inter coquendum spuma parum emittens.* In *Fern. 1. 7. de Oxyniel.*

This good Honie, specially that part which is in the bottom, will in time grow (like vnto *Corne-honie*, v. in the vppermost part of the Combes) hard and white: such as is the Honie of * *Spains* and *Narbona* in *France*, which is accounted the chiefest, and compared with that of † *Hymettus* and *Hybla*. But this is to be vnderstood of ordinarie Honie: for the pure Virgin Honie will bee neither hard nor white; but changeh his liquiditie and crystalline cleernesse v. into a thicke softnesse, and bright yelow colour.

13.
How to know
good Honie.
V. c. 6. n. 29.

* *Quin Hispani & Narbonenses militant albissimum & longe praestantissi- mum, id. m:q; pradurum, Syl. l. 1. med.*

14.
Good Honie with
standing waxeth
hard and white
V. c. 6. n. 27. &
28.

† *Nec Attico aut Hybla: inferior, cum regionis temperatura, & thymi larga luxurias vtrobiq; consentiant. Idem l. 2.*

15.
The best of the
Honie is in the
bottome.

And alwaies the best part of all Honie is that which is lowest in the vessell. * For as the best oyle is in the top, and the best wine in the middle; so the best Honie is in the bottom. *Mellis exilior pars fluitat, qua eximenda est: pura vero & valida subsidit.* Arist. Hist. ani. l. 9. c. 40. *In imo vase quod sit, supernatante pretiosius.* Plan. in Fern. l. 7. de Oymel.

* As among liquors Oyle excelleth in lightnesse, and Honie in heauinesse; so in both that part is best, which excelleth in his excelling qualite: and Wine being of a middling weight, is best in the middle.

The weight of these three, one to an other, hath this proportion. Oyle is not so heauie as Wine by one tenth part: for if you fill a measure with Wine, and diuide it into ten parts; the same measure of Oyle is no heauier than nine of them. And Honie is heauier than Wine by the halfe: for if you fill a measure with Wine, the same measure of Honie wil weigh that and halfe so much more. *Quoniam Oleum levius est Vino parte nona, Mel vero gravius Vino parte dimidiat; que curq; mensura capit Mellis uncias quindecim, capit Vini uncias decem, & Olei novem.* Fern. Meth. l. 4. c. 6.

* Ceu potius
decima.

16.
The dressing of
the second part
for Meth.

The second part of the Combes, appointed for Hydro-mel or Meth, you must first rid of the sandarach as neere as you can: cutting off that which is by it selfe, and * picking out that which is among the Honie: all which refuse, because of the wax that is with it, cast to the third part.

* If thus to part the Honie and the droffe shall seeme but a tedious piece of worke; you may leauie it vnto them that are expert in it. V. c. 8. n. 13. And make your Meth of more meeie Honie.

17.
How to make the
Meth-liquor in
two boots.

And then, when the Honie is all strained, and put vp; lay this second part a soake in milk-warme faire water, (that which commeth from heauen is counted best) in the Kive or Tub with his Tap and Tap-waze. But first wash the drie Combs therein, if any Honie chance to sticke vnto them in the handling: then scrape and wash the Spleers, and lay them aside out of the way: and lastly, crush all the Pulse well betweene your hands, specially that which lieth lowest, and stirring is about all-to-wash it: and so let it steepe all that night.

In the morning let this first shoot of the Must or Woort, being made of his iust strength, v: runne through the Tap-Waze. The Pulse which remaineth, when you haue squeezed out the liquor, breake and wash in fresh warme water in the Kiue, for a second shoot. When it hath lien a while in soake, first take those parcels that swim, and squeezing out the liquor * betweene your hands, lay the balls aside to the third part: (but let your Bees haue the perusing of them) then take vp those that lie in the bottome, and doe likewise: which because they haue most Honie, you must take most paines in washing and crushing them. And while this is doing, let this small liquor runne into a vessell by it selfe. When it is out, wash into it all the remainders of Honie v: adding some course Honic, if need be, to make it of his iust strength: v: and then let both shoots run together through a Clensieue into the Kiue againe. And thus shall you lose none of your Honie.

* If there be much Pulse, vse a presser, when the liquor hath runne what it will.

† The Clensieue is vnto the Tap-waze for Methe, as the Strainer to the Ridder for Honie. v. n. 7.

Meth or Hydromel is of two sorts: the weaker and the stronger, *Mede* and *Methaglen*.

For the making of *Mede*, if the Must, when it is all together, be not strong enough to beare an Egge the bredth of a two-pence aboue it, then put so much of your course Honic into it as will glue it that strength: which is sufficient for ordinary *Mede*. And afterward vntill night, euer now and then stirre it well about the Kiue.

If you would make a greater quantitie, then must you adde a proportionable measure of water and Honie: namely six of that for one of this. The learned Physician *Mathias de Lobel* requireth this proportion of six to one to be boyled to four. His receipt of Spices is *Cinamom, Ginger, Pepper, Graines, Cloues, And two drammes*. The second morning put to the Must the scum of the Honie, stirre all together, and stoope the Kiue a little backward. When it

The first shoot.

V. n. 19. & 24.

The second shoot.

V. n. 8.

V. n. 19. & 24.

Two sorts of Hydromel, Mede and Methaglen.

19. When the liquor is strong enough for Mede.

20. What proportion of water to honey.

hath settel'd an houre or two, draw it out to be boyled. And when you see the grounds beginne to come, stay ; and let the rest (sauing the very thick grounds, which cast to your Bees) runne into some vessell by it selfe: which, when it is settel'd, peere out into the boiling vessell through the Clensieue, and cast out these grounds also into your Garden.

This Must being set ouer a gentle fire, when you see the Scum gathered thick all ouer, and the bubbles at the side begin to breake it ; hauing slacked the fire, to cease the boylung, skim it cleane. Then presently make a fresh fire to it : and when you see the second skum ready, hauing * slacked the fire againe, take it quickly away : then make to it the third fire, and let it boyle to the wasting of a fourth part, if it bee made of the washing of Combines ; and to the wasting of one fist or sixt part, if it be made of cleane Honie : not ceasing in the meane space to take off the Scum as cleane as you can. One houres boylung may suffice : but if the Meth bee of cleane Honie, it may as well be done in halse the time.

* In stead of twice slacking the fire, you may twice coole the boylung Must with cold Must reserved : or else be sure that it doe boyle all the while onely at one side, and not all ouer.

22. After all this, put in the spices, *viz.* to a dozen gallons of the skimmed Must Ginger one ounce, Cinamom halfe an ounce, Cloues and Mace *Ana* two drams, Pepper and Graines *Ana* one dramme, all grosse-beaten, the one halfe of each being sowed in a bag, the other loose : and so let it boile a quarter of an houre more.

The end of boylung is throughly to incorporate the Boorns, and the Honie, and to purge out the drosse : which being once done, any longer boylung is vnprofitable, as diminishing more the quantitie, than increasing the strength and goodness of the Hydromel.

23. As soone as it is boyled enough, take it from the fire, and set it a cooling : the next day, when it is settel'd, poure it out, through a Haire-siue or linnen bag, into the Kiue: (reseruing still the Lees for the Bees) and there let it stand couered, three or four daies till it worke ; and let it worke two daies.

Then

Now, and how
long the Must
must be boyled.

The receipt of
Spices.

How the Must is
to be vsed when
it is boyled.

Then draw it through the Tapwaze, and tum it into a Barrell scalded with Bay-leaues, making the Spice bag fast at the tap. If there remain much grounds, you may purifie them by boiling and skimming againe as before: but this will never be so good as the first: and therefore you may put it by it selfe, or with some remainder of the best, into a small vessell to spend first, before it be soure. If the Meth. be not much, you may tun it the next day, and let it worke in the Barrell. Being tunned, it will in time be couered with a mother: which if, by iogging the vessell, or by other meanes, it be broken; the Meth. will turne soure. But so will it make excellent Vineger, and the sooner, if it be set in the Sun: which the longer you keepe, the better it will be.

Methaglen is the more generous or stronger *Hydromel*: being vnto *Mede* as *Vinum* to *Lora*. For it beareth an Egge the breadth of a groat or six pence: and is vsually made of finer hony, with a lesse proportion of water; namely, fourmeasures for one: receiving also in the composition as well certaine sweet and holsome hearbs, as also a larger quantite of spices: namely, to euerie halfe Barrell or sixteene Gallons of the skimmed Must, Eglantine, Majoram, Rose-marie, Tyme, Winter-sauourie, *ana* halfe an ounce; and Ginger two ounces, Cinamom one ounce, Cloues and Mace *ana* halfe an ounce, Pepper, Graines, *ana* two drams, the one halfe of each being bag'd, the other boiled loose. So that whereas the ordinarie *Mede* will scarce last halfe a yeere; good *Methaglen* the longer it is kept, the more delicate and holsome it will be: and withall the clearer and brighter, according to the *Etymon* of the name. v.* in p. 3. n. 23.

24.
*The making of
Methaglen.*

He that listeth to know the many and sundry makings of this holsome drinke, must learne it of the ancient *Britaines*: who therein doe passe all other people. One excellent receipt I will here recite: and it is of that which our renowned *Queene* of happie memorie did so well like, that she would euerie yeere haue a vessell of it.

First, gather a bushell of Sweet-briar-leaues, and a bushell of Tyme, halfe a bushell of Rose-marie, and a pecke of Bay-leaues. Seeth all these, being well washed in a Furnace of

25.
*The Queenes
Methaglen.*

faire water: let them boile the space of halfe an houre, or better: and then poure out all the water and herbes into a Vate and let it stand till it be but milk-warme: then straine the water from the herbes, and take to euerie * six Gallons of water one Gallon of the finest Honie, and put it into the Boorne, and labour it together halfe an houre: then let it stand two daies, stirring it well twice or thrice each day. Then take the liquor and boile it anew: and when it doth seeth, skim it as long as there remaineth any drosse. When it is † cleere put it into the Vate as before, and there let it be cooled. You must then haue in a readinesse a Kieue of new Ale or Beere, which as soone as you haue emp-tied, suddenly whelme it vpside downe, and set it vp againe, and presently put in the *Metheglen*, and let it stand three daies a working. And then tun it vp in Barrels, tying at euerie Tap-hole, by a Pack-thread, a little bag of Cloues and Mace, to the value of an ounce. It must stand halfe a yeere before it be drunke.

* If you marnell that so great a quantitie of water is required; it is partly because of the goodnessse of the Honie, which being pure and fine goeth further than ordinarie: and partly that it may haue the longer time in boiling, before it come to his strenght. And therefore some will haue eight parts of water to one of Honie: but then they boile it so much the longer.

† The third part at least being wasted.

26.
The dressing of
the third part
for Wax.

27.
First boile it
with water.

28.
Then straine it
by pressing.

THE third Part consisting of wax and drosse, set ouer the fire in a Kettle or Caldron that may easily containe it: and poure into it so much water as will make the wax to swim, that it may boile without burning: and for this cause, while it is seething with a soft fire, stir it often. When it hath sod a while and is throughly melted, take it off the fire, and presently poure it out of the Kettle into a Strainer of thin strong Linnen, or of Twisted-haire, readie placed vpon a Wrenge or Presse: and then winding and doubling the necke of the Bag, lay on the Couer and presse out the liquor as long as any Wax commeth into a Kiever of cold water, but first wet therewith both the Bag and the Presse, to keepe the Wax from sticking. At the first commeth forth most water, at the last most drosse, in the middle-most Wax.

The

The Wax waxing hard, make into Bals, squeezing out the water with your hands. When you haue thus done, presently while they are warme breake all the Balls in (2.) small Crumlets into a Skillet or Kettle set ouer a (3.) soft fire. While it is melting, stir it and skim it with a spoone (4.) wet in cold water: and as (5.) soone as it is melted and skimmed cleane, take it off. And hauing prouided the (6.) mould, first (7.) warme the bottome, specially if the cake be small, and (8.) besmeare the sides with Honie, and then instantly poure in the wax (9) (being as coole as it may run) through a linnen straining-bag. When you come neere the bottome, peere it gently till you see the drosse comming: Which straine into some other mould by it selfe. And when it is cold, either trie againe, or hauing pared away the bottome, reserue it, as it is, for some vse.

When the Wax is in the mould, if any froth yet remaine vpon it, blow it together at one side, and skim it off lightly with a wet spoone.

This done, set not the cake abroad, or where it may coole hastily vpon, but in the warme house: and if it be great, couer the mould with a Platter, as close as you can, to keepe the top from cooling, till the (10.) inward heat be alayed: and so let it stand, not mouing the mould till the cake be cold. If it sticke, a little warming of the vessell or mould will presently loose it: so that it will flip out.

(1.) So will they breake the smaller with lesse labour. (2.) That the wax may melt the sooner, and all together. (3.) For a rash fire will burne it, and change both colour and qualitie. (4.) That the skum sticke not. (5.) For ouer-heating will discolour the Wax, turning the bright yellow into a darke or reddish colour, not so commendable in Wax: for thereby it is knowne to haue lost of his fainte and sweetnesse, and to be the worse for all vses. (6.) Which may be a bason or other vessell of mettall or earth, bigg or vpward than in the bottom. (7.) Lest the Wax first poured in (which is the best) being presently cooled, lie beneath the drosse. (8.) To keepe the Wax from sticking to the sides of the mould, and consequently to helpe save the Cake from cracking. For Wax shrinketh in cooling, as new walles in drying: and therefore if the Cake sticke not, it shriketh together from the sides, and so is lesse than the mould, and whole: but if it sticke fast to the sides, then must it needs cracke, one part shrinking from another (specially if it coole hastily vpon) as it happeneth commonly in great Cakes: For small ones, whose inward heat is

29.
Next make the
Wax into Bals

30.
Last of all melt it
and cast it in a
mould

31.
And keepe the
cake from
cracking.

alayed by that time the vpper part beginneth to harden, are not so subiect to cracking. (9.) & (10.) For the great heat of the Wax doth cast vp the watterie vapours mingled with it: Whiche so long as the vpper part of the Cake continueth liquid, doe easilie passe: but when it is hardened, and the Wax yee feruent hot beneath; the vapours being violent through the inward heat, must needs either cracke the Cake, or heaue it and make it hollow, or both, specially if it be verie great: for then will the heat be both stronger and longer: but this is helped by not sticking. v. ante num. (8.)

32.
How to know
good Wax.

Silv. de med.
Simpl. delectu.
lib. 1.

The properties or tokens of good Wax are (1) most yellow, sweet, fat, (2) fast or close, (3) light, (4) pure, and void of all other matter. *Cera sit flavissima, odorata, pinguis, coacta, levis, pura, & aliena omni materia carens.*

(1) That is most light yellow, fardest from red, and neerest to white: for as in gold the deepest, so in Wax and Hony (v.n. 13.) the palett yellow is best: yea the pure Virgin-wax at the first is white. v. c. 6. n. 14. (2) not hollow as the froth is. (3) For Wax, like Oile, is best in the top, as Hony in the bottome (v.n. 15.) except the hollow froth, which is to be skimmed away. v.n. 30. (4) and therefore the bottom, vnto which the droffe doth descend, is not good.

*The third part of this Chapter sheweth the singular vertues of
(1) Honie, (2) Methe, and (3) Wax for
the use and comfort of man.*

1.
The properties
and vertues of
Hony.



Onie is (1) hot and dry in the second degree: it is of (2) subtil parts, and therefore doth pierce as Oile and (3) easily passe into the parts of the bodie: It hath (4) a power to cleanse, and some sharpnesse withall, and therefore it (5) openeth obstructions, it (6) cleereth the brest and lights of those humors, which fall from the head to those parts, it (7) looseth the belly, (8) purgeth the foulnesse of the bodie, and (9) prouoketh Vrine, it (10) cutteth and casteth vp Flegmatike matter, and therfore sharpneth the stomackes of them which, by reason thereof, haue little appetite, (11) it purgeth those things which hurt the cleerenesse of the eyes, (12) it nourisheth verie much, (13) it breedeth good bloud, (14) it stirreth vp and preserueth naturall heat, and prolongeth old age (reade the note) (15) it keepeth all things vncorrupt, which are put into it, and therefore (16) Physicians doe temper therewith such medicines as they meane to keepe long:

long: (17) yea the bodies of the dead, being embalmed with Hony, haue beeene thereby preserued from putrefaction. (18) It is a soueraigne medicament both for outward and inward maladies; (reade the note.) (19) It helpeth the grieves of the jawes, (20) the kernels growing within the mouth, (21) and the squinancie or inflammation of the muscle of the inner gargil, for which purpose it is gargarized, and the mouth washed therewith: (22) it is drunke against the biting of a Serpent (23) or mad Dog: and (24) it is good for them which haue eaten Mushromes, (25) or drunke Popy; against which euill yet, Rosed-hony is taken warme. (26) It is also good for the falling sicknesse, and better than Wine, because it cannot arise to the head, as the Wine doth. (27) Lastly, it is a remedie against a surfeit: for they that are skilfull in phisick, when they perceiue any mans stomacke to be ouercome, they first easie it by vomit: and then, to settle his braine, and to stay the noisome fume from ascending to his head, they giue him Honie vpon bread. In respect of which great vertues (28) the right composition of those great Antidotes, *Treacle*, and *Mithridate* (although they consist, the one of more than fiftie, the other of more than sixtie Ingredients) requireth thrice so much Honie as of all the rest. All which premisses considered, no maruell though the wise King said, My sonne eat Hony, for it is good: *Prov. 24. 13.* that the holy Land is so often and so much commended for flowing therewith: *Exod. 3, 8. 13, 5. 33, 3. Lev. 20, 24. Num. 13, 27. Deut. 8, 8.* and that the Eternall *Immanuel* did vse it for his food. *Isa. 7, 15. Luk. 24, 43.* Yea Honie, if it be pure and fine, v. is so good in it selfe; that it must needs be good, euen for them whose queisie stomackes are against it. But indeed the vulgar hony may well be disliked, as being sluttishly handled, & much corrupted with stopping, and Bees both young & old, v. & some with other mixtures also.

^{2.}
Against both
outward and
inward grieves.
Synanche.
Angina.

V. p. 2. n. 4. & 6.

V. p. 2. n. 10.

(1) Galen. de simpl. med. facult. lib. 7. (2) tenuium partium. Simeon. Seth. (3) facile distribuitur. Matthias de Lobel. (4) detergendi vim. Galen & Seth. (5) Lobel. (6) Wikerus, & Freitagius. (7) Seth, & Freitag: & Plantius in Fernelium de syrupis. (8) Seth. (9.) Seth, & Pictorius. (10) (11) Lobel. (12) (13) Freitagius. (14) calorem natum susciat & tuncetur, & longam prorogat senectam. Plant. loco supra citato.

Exempla

Exempla citat *Franciscus Valerius Medicus locorua* com. lib. 3. cap. 12. *Antiochus Medicus*, & *Telephus Grammaticus* anno 500. *Attico* melle ex pase alicere excepto plurimum utebantur. *Quos Galenus* l. 5. de *Sanit.* tuenda cum exempla vita senum, quibus esset optimè rictus ratione illata senecta, proponit. *Melle* itaque sensibus plurimum utendum consulso, si modo sua ipsorum valitudinis rationem habere velint. Et l. 3. c. 19. *Melli* vim proferenda vite, senecta, longe aegide, authores affirmant: *Democritus* *Philosophus*, qui melle oblectatus assidue, in annos centesimum nonumq; fatus diem disulit, interrogatus, ut scribit *Athenaeus*, quomodo quispiam sanguis vivere possit. Si exteriora oles, inquit, interiora melle irriget. Erat etiam *Pythagoricorum* cibus panis cum melle. *Aristoxenus* eos sine morbo vivere posse assertit, qui ea semper in prandio comedant. *Licus* multum *Cyrnios* vivere scribit, quia, apud *Sardonem* habitantes, melle semper vescuntur. Nec immixtio, quum alimentum sic familiare, & natura amarum, dulcedine quam possidet jucundum: obstrukciones insuper eximat, infarctuque libet, ventrem molliat, corporis habitum calefaciat, urinam ciet, thoracem pulmonesq; iuvet, tonsillis & uva medicatur. Quae cum tanta possit, vel *Dioscoridis* & *Galeni* testimonio haud immixtio producenda etati viteq; proroganda idoneum esse medicamentum asserimus. (15) *Seth.* & *Plin. hist.* l. 7. c. 3. (16) *Pictorius.* (17) *Claudius Cæsar* scribit hippocentaurum in *Thebaliæ* natum eodem die interisse. Et nos principatu illius allatum illi ex *Egypto* in melle vidiimus. *Pl. hist.* l. 7. c. 3. (18) *Mel* calidum siccumque ordine secundo aperit, putredini obſſit, siccat, deterget, expurgatque meatus & ulceræ. *Fern. Method.* lib. 6. c. 12. Item, *Mel* & *saccharum* potionibus admixta vires naturales in morbis ſopitas & languentes excutit & erigunt: nativumque calorem qui ſolus morbos concoquunt & mitificat, recreant: crassaque extenuando, viscosa extergendo, & obſtructa expediendo purgationes quam facillimas praeflant. *Plantius* in *Fern. de Syrupis*. Item, *Mel* abſtergendi vim habet, ora rorū aperit, humores evocat, qua ratione in ſordida ulcera ſinusque commode infunditur, decoctum atque impoſitum abſcedentem eam glutinat, medetur lichenibus, impetigini coctum cum liquido alumine & illitum. Item aurum ſonitū & dolori cum foſſili ſale trito tepidum inſillatur: lentes & ſeda capitis animalia illitum necat, oculorum caliginem diſcutit, fauibus, tonsillis, angina collutum gargarizatumque medetur, urinam ciet, auxiliatur tuffi; contra haufum meconium cum roſaceo calidum affumatur, adverſus venenafungorum & rabiōſe caris morſas linetur aut potum proficit: crudum ſamen alvum inſlat, tuſſim laceſſit: & ea de re despumato utendum. *Dioscorid.* lib. 2. cap. 101. (19) (20) (21) (22) (23) (24) (25) *Pictorius.* *Mellis* natura talis est, ut putrefacte corpora non ſinat: Faucibus, tonsillis, angina, omnibusque oris deſiderijs utilissimum, aſſentientie in febribus lingua. *Pl. hist.* l. 22. c. 24. (26) *Lobel.* (27) *Pict.* (28) *Fernel. Method.* l. 7.

3.
For whom Hony
is best.

✓. (24) in note

2.

Hony is most fit for (1) old men, v. for women and children, for ſuch as are rheumaticke and flegmaticke, and generally for all that are of a cold temperature. (2) To young men, and thoſe that are of a hot conſtitution it is not ſo good, be-cause it is eaſily turned into choller: and yet *Lobel* faſh wee know that Honic taken fasting doth much good vnto ſome natures,

natures, which haue hot livers: and in this point he preferreth our English Honie. *Minus* (saith he) *speciosum ac deliciatum Anglum*: sed quibusdam prasertim saltibus & pascuis, ubi lana commendator, v. lectum, biliosa excrementa inferius extergendo pellit, & acies oculorum prodesse putatur. So that he seemeth to say, that our honie is hurtfull to none; because it purgeth that euill humour, which other Hony, in some bodies, is thought to breed. But the Prouerb saith, *Too much of one thing is good for nothing*: and the Wif-man in his Prouerbs, *It is not good to eat much Honie*. Prou. 25, 27. and in the 16, 6. *Hast thou found Honie? eat so much as is sufficient for thee: &c.* For all Hony often and immoderately taken (3) causeth obstruction, (4) contrarie to his naturall qualitie, and so in time (5) breedeth the scab.

(1) (2) Galen. l.4. simp. med. dist. 3. c. 5. Item Seth. Pictorius, & Freitag.
(3) Wikerus & Freitagius (4) vide (8) & (18) supra. (5) Lobel.

Raw Hony doth (1) more loose the belly, (2) causeth the cough, and (3) filleth the entrailes with winde, specially if it be of the courser sort. Being boiled it is (4) more nourishing, (5) lighter of digestion, and (6) leesse laxatiue, also (7) leesse sharpe and abstersory: for which cause they vse it (8) to knit together hollow and crooked ylcers, and likewise (9) to close other disioined flesh. It is also good against the (10) pleurisie, against the (11) phthisis, and all other diseases of the lungs.

(1) (2) (3) Freitag. Pictor. & Wikerus. (4) Freitag. & Wiker. (5) Wikerus. (6) Pictorius. (7) Gal. & Seth, & Fernelius Methodi. lib. 6. c. 12. Crudum cocto & despumato detergentius quidem multo est & mordacius: sed eo minus agglutinat. (8) ad sinuum glutinationes, Seth. sinuorum ulcerum, Galen. (9) (10) (11) Pictorius.

Honie is clarified by boiling: and that either by it selfe, or else with a fourth part of water, or other liquor. But alwaies in boiling skim it, that it may be pure.

By it selfe you must boile it vntill it will yeeld no more * skum, (which will be about halfe an houre) and that with a very soft fire, or in a † double vessell; lest, by ouer-heating, it get a bitter taste, and lest it suddainly run ouer and flame.

4.
English Hony.
V. p. 2, n. 12.

5.
Too much Hony vnholsome.

6.
The difference operations of raw & boiled Hony.

7.
Two waies to clarify Hony.

* The right skum, which is drosse, is short and brittle: which when it is cleane taken away, the force of the fire will cause the very Hony to rise vp like a skum: but that will then be tougher and more clammy than the drossie skum, and so will all the rest be, when it is cold, as being ouer-boiled: therefore be sure to take it off in time.

† i. a vessell set in a vessell of boiling water, called, *Balneum Mariae*, which is best.

V. Fernel. l. 4. c.

15.

* *Lesse white
may serue, if the
Honie be good.*

With water it is to be boiled an houre at the least, euen vntill the water be euaporated: v. which thing is knowne by the bubbles that rise from the bottom: then, to make it more pure, put into every pound of Hony the * white of one Egge, and afterward skim it againe in the boiling. The fire may be more seruent at the first; but toward the end it must be slacke: for it is then apt to be set on fire, as the meere Hony, and to become bitter with violent heat.

The course Honie being boiled and clarified hath a pleasant taste, and is comparable for most vses to the purest bottom-honie being raw.

Which pure Honie, if you be disposed to boile it, will aske lesse time to be clarified, as yeelding little or no skum at all: and in taste and vertue it is more excellent.

When your Honie is boiled enough, take it from the fire; and rather too soone, than too late: for if there bee any drosse remaining, you shall finde it in the top, when it is cold: but ouer-much boiling consumeth the spirituous parts of the Honie, and turneth the sweet taste into bitter.

8.
The quintessence
of Honie.

9.
The vertues of it.

And such is Honie in his owne kinde, both raw and boyled. It is also altered by distillation into a water, which *Raimundus Lullius* that excellent Chymist calleth the Quintessence of Honie. This Quintessence dissolueth Gold, and maketh it potable: likewise any sort of pretious stone that is put therein. It is of such vertue, that, if any bedyng, and drinke two or three drammes thereof, presently he will reuive. If you wash any wound there-with, or other sore; it will heale quickly. It is also good against the Cough, Catarr, and paines of the Melt, and against many other diseases. Being giuen for the space of six and fortie daies together to one that hath the Palsie, it helpeth him. Which thing

Iohn

P. 3. Of the fruit and profit of Bees.

C. 10.

John Hester a Practicall Chymist, in his Key of Philosophie, professeth himselfe to haue proued. It helpeth also the falling sicknesse, and preserueth the body from putrefaction. Of so maruellous efficacie is this water.

The making of it is after this manner. Take two pound of perfect pure Honie, and put it into a great Glasse, that foure parts of fwe may remaine emptie: * Lute it well with a Head and Receiuer, and giue it to fire vntill there appeare certaine white Fumes: which, by laying wet clothes on the Receiuer and Head, and changing them when they are warme, will turne into a water of a red colour like blood. When it is all distilled, keepe the Receiuer close shut, and let it stand till it be cleere, and of the colour of a Rubie. Then distill it in *Balneo Mariae* seuen times; and so it will lose this reddish colour, and become yellow as Gold, haing a great smell and exceeding pleasant.

* The Lute may be made of Clay, Flockes, and Salt-water, tempered together; or of Meale and whites of Egges.

† The Lute being first dried in the Sunne or by the fire.

Now as Honie is good by it selfe, either altered or in his owne kinde; so is it also being mixt with many other Simples: which here to declare would seeme but tedious and impertinent. Notwithstanding it shall not be amisse, in two or three instances, to giue you a taste of such Confectiones; and first of those that are inwardly, then of those that are outwardly received.

Of the first sort are Marmalade, and Marchpane, preserued Fruits, as Plums, and Cherries, &c. Conserues of Roses, Violets, &c. with Syrups of the like matter.

Marmalade is thus made. First boile your Quinces in their skins till they be soft: then, haing pared and strained them, mix there-with the like quantitie of clarified Honie: and boile this together till it be so thicke, that in stirring (for you must continually stirre it for feare of burning) you may see the bottom; or, being cooled on a Trencher, it be thicke enough to slice: then take it vp and box it speedily. You may also adde a quantitie of Almonds, and Nut-kernels: also Cinamom, Ginger, Cloues and Mace, of each a like quantity,

10. *The making of it.*

11. *The vertue of Honie in Confectiones.*

12. *Marmalade made of Honie.*

tie, pounded small and put into the Honie with the Quinces, and in boiling to be stirred together. This is very good to comfort and strengthen the stomack. For want of Quinces you may take Wardens, Peares, or Apples, and specially the Peare-maine, Giliflower, Pipin, and Roiall.

13.
Marchpane.

Marchpane may be made after this manner. Boile and clarifie by it selfe, so much Honie as you think meet: when it is cold, take to euery pound of Honie the white of an Egge, and beat them together in a Bason, till they bee incorporat together and wax white, and when you haue boiled it againe two or three walmes vpon a fire of coles, continually stirring it, then put to it such quantitie of * blanched Almonds or Nut-kernels stamped, as shall make it of a iust consistence: and after a warme or two more, when it is well mixt, powre it out vpon a Table, and make vp your Marchpane. Afterward you may ice it with Rose-water and Sugar. This is good for the Consumption.

* Steepe them a night in cold water, and the peeles will come off.

14.
Preserves.

Preserue Fruits after this manner.

The Damascens, or other Fruit, being gathered fresh from the tree, faire, and in their prime, neither greene or fower, nor ouer-ripe or sweet, with their stalks, but cut shourt; weigh them, and take their weight in raw fine Honie: and putting to the Honie the like quantitie of faire water, boile it some halfe quarter of an hour, or till it will yeeld no skum: then hauing slit the Damascens in the dented side for feare of breaking, boile them in this liquor with a soft fire, continually skimming and turning them till the meat commeth cleane from the stone, and then take them vp. If the liquor be then too thinne, boile it more: if in the boiling it be too thick, put in more faire water, or Rose-water if you like it. The liquor being of a fit consistence, lay vp and preserue therein your Fruits.

If they be greater Fruits, as Quinces, Pipins, or the like; then shall it bee expedient, when you haue bored them through the middle, or haue otherwise coared them, to put them in as soone as the liquor is first skimmed: and then to let them boile till they be as tender as Quodlings.

Conserues

Conserues of Roses is thus to be made. Take of the juice of fresh Red Roses one ounce, of fine Honie * clarified tenne ounces, boile this together: when it beginneth to boile, adde of the leaues of fresh Red Roses clipt with Scissors in little pieces four ounces, boile them to the consumption of the juice, and presently put vp the Conserues into some earthen vessell. Keepe it long therein: for in time it waxeth better and better. *Sylv. l. 3. de med. simp. mist.*

After the same manner is made Conserues of Violets. Syrup of Roses make thus. Steep fresh Roses in hot water ouer the Embers, (the vessell being couered) vntill the Roses wax pale: then straine out the Roses, and put fresh in their places, vntill they also are pale: this doe ten times, or vntill the water be red. And this being purged with Whites of Egges, (to euery pinte of liquor one) boile it gently with like quantitie of fine Honie, vntill it be of conuenient thicknesse. If you prepare it for present vses, the leesse boiling will serue: if you meane to keepe it, it requireth more, for which purpose the sunning of it is good. This purgeth a little, specially being new. *Sylv. Med. S. M. lib. 3.*

Or thus. Steep one pound of Red Rose leaues in four pound of water fourre and twentie houres. When the water is strained, put vnto it two pound of fine Honie, and boile it to the thicknesse of a Syrup, taking off the skumme as it riseth. It tempereth the hot affections of the braine, it quencheth thirst, it strengtheneth the stomacke, it procureth sleepe, and stayeth thin rheumes. *Fern. Meth. lib. 7.*

The Syrup of Violets is made, after the same manner, of fragrant Violets, and steeped vntill the liquor be blew. Being well boiled it may be kept a yare without vinewing or corruption. It tempereth and purgeth hot and sharp humours; and therefore is good in a Pleurisie: it expelleth Melancholie, and the effects thereof, as head-ach, waking, dreaming, and heauiness of heart: it is fit to be vsed before, and after purging. *Plantius in Fernel. meth. l. 7.*

If any man like better to make these Confections with Sugar, let them take the like quantitie of Honie: for Sugar

Melrosatum.
* Cum vncijs
aqua tribus
mediocriter
despumetur.
r. n. 7.

also hath with his sweetnesse a power to * preserue, as being a þ kinde of Honie.

* Condiuntur fructus aut melle, aut Saccharo. *Fernel. Meth. l. 4. c. 17. & Sylv. simpl. med. misl. l. 3.*

† Saccharum quod ex India & fælici Arabia convehitur, concrescit in calamis: estque mellis species, nostrate cere minus dulce, sed similes ei vires obtinens, quod ad abstergendum, desiccandum, & digerendum pertinet. *Galen. de simpl. med. facult. lib. 7.* Item, Est & quoddam mellus concreti genus quod Saccharum nominant: quodque in India & fælici Arabia in arundinibus reperitur. Saccharum est mel in arundinibus collectum. *Plin. l. 42. c. 8.* Saccharum mellis species cum sit, siccat quoque & abstergit. *Fern. Meth. l. 6. c. 12.*

17.
Honie to be pre-
ferred before
Sugar.
V. p. 2. n. 4. & 6.
F. n. 1. & 2.

But in respect of the maruelous efficacie, which fine v. and pure Honie hath in preseruing health, v. that grosse and earthy stiffe is no whit comparable to this Celestiall Nectar. Although some queint and Ladilike palats (whom nothing but that which is farre saught and deare bought can please) vnhappily negleget it. In preseruing Fruits it hath more power through the viscositie thereof. Also Conserues, and Syrups being made with Honie * continue longer, and doe more kindly worke their effects. So that wee may conclude with *Ecclesiasticus, cap. 11. 3.* *The Bee is little among such as flye: but her Fruit is the chiefe of sweet things.*

* Ex melle consecutus syrpus diutius asservatur; is quoque magis incidit, ac detergit. Ex Saccharo suavior, sed non æque efficax. *Fern. Meth. l. 4. c. 12.*

18
Honie good in
outward medi-
cines.

19.
A salve for an
old sore.

Honie is vsed in outward medicines for diuers purposes: * not onely to conteine the other ingredients in forme of a Plaister; but also to open, to cleanse, to dry, to digest, and to resist putrefaction. And therefore it hath the predominance in that excellent Salue, called † *Unguentum Ægyptiacum*: which serueth to cleanse and mundifie old sores, and to take away both dead and proud flesh. The receipt whereof is this. Of Verdegrece fwe ounces, of strong Vineger seuen ounces, and of Honie foureteene: boile first the Honie and Vineger, and stirre them together: after a little while put in the Verdegrece, being pounded to powder: and then, stirring all together,

together, let them boile vntill the Ointment haue his iust thicknesse and Purple colour.

* *Mel panaciæ & alijs quibusdam emplastris miscetur, ut corpus præbeat emplasticum, & præterea siccet, tergeat, digerat, à purredine vindicet. Sylv. de med. simp. misc. l. 3. Mel calidum siccumque ordine secundo aperit, purredini oblitus, siccat, dererget, expurgatque mictus & ulcera; nec ut sal, corporum substantiam coarctat. Fern. Meth. l. 6. c. 12.*

† *Sylv. de med. simp. misc. l. 3. sect. 10. & Fern. Meth. l. 7.*

Another of like vertue, but not so much corrosive.

Boile a quart of good Ale in a Skillet to halfe a pinte, skimming off the froth as it ariseth: then put in a spoonfull of good Honie: and skimming still as need is, let it boile to the halfe, or till it be so clammy that being taken vp vpon a stickes end it will not drop, but string downe like clarified Honie.

20
Another.

WHAT are the vertues and properties of *Meth* or *Hydromel*, may partly be knowne by that which hath beene said of Honie. For seeing Honie is the chiefe matter whereof it is made; it must needs, together with the substance of Honie, participate the naturall qualities thereof. The which, by the purifying in boyling, together with the accesse of sundry holsome ingredients, v. are rather confirmed and increased, than any way extenuated or diminished. Therefore saith Lobel, *Mulsum, ubi aquæ plurimum mellis non multum, diuturna intestinag, mellis ebullitione in vinum longè utilissimum abit.* And Pictorius, *Hydromel longa ventestate transit in vinum stomacho convenientissimum.* Meth, when it is old, is a Wine most agreeable to the stomach: it recouereth (1) the appetite being lost, it (2) openeth the passage of the Spirit or breath, it (3) softneth the belly, it (4) is good for them that have the cough. (5) If a man take it, not as his ordinarie drinke, but, as Phylick, now and then; he shall receiue much benefit by it against *Quartan Agues*, against *Cacexies*, and against the diseases of the braine, as the *Epilepsie*, or the falling Euill: for which Wine is pernicious: it (6) cureth the *Yellow Jaundise*: it (7) is also good against *Henne-bane* with Milke, and against the

21
*The properties
and vertues of
Mede and Me-
thæglen.*

V. p. 2. n. 21. 22.
& 24.

Winter-

Winter-cherrie, it (8) nourisheth the bodie. (9) So that many haue attained to long old age, onely by the vse thereof. And therefore no maruaile that *Pollio Romulus*, who was an hundred yeares old, imputed the greatest cause of his long continued health to this Soueraigne drinke. (10) For being asked of *Augustus* the Emperour, by what meanes especially he had so long preserued that vigor both of minde and body, his answer was, *Intus muljo, foris oleo.*

(1.2.3.4.) *Pictorius*, & *Plin. hist. l. 22. c. 24.* (5) *Lobel.* (6.7.8.9.10.) *Plin. hist. l. 22. c. 24.*

^{22.}
Meth much vſed
of the ancient
Britaines.

The same thing is more manifested by the generall example of the ancient *Britaines*: who, aboue all other Nations, haue euer beeene addicted to *Meth* and *Methaglen*. For vnder Heauen there is no fairer people of complexion, nor of more sound and healthfull bodies. Of whose *Methaglen* *Lobel* writeth thus: *Cambricus ille potus Methagla, non patrio, uti putant illi, sed* Graco nomine dictus, est altera liquida & limpida Septentrionis theriaca.*

^{23.}
Whence Meth
and Methæ-
glen haue their
name.

* *Hydromel borealis, quibus vineta desunt, pro vino est. Ideoque Cambriis à μέλῳ Meth dicitur. Pro qua voce Germani (quibus Teutonio idiomate solenne est D pro Th usurpare, ut in De, Dīs, Dat, Dun-der; pro The, This, That, Thunder) adeoque Angli etiam, aliquique populi boreales à Germanis oriundi, corrupte dicunt Mede. Medonis plurimum bibunt Poloni & Lituani, quod Melle abundant, inquit Andreas Matthioli. Methaglen vero, quod Hydromel est præstantius, à μέλῳ αἰγάλην sive contracte αἰγάλην, id est, vinum splendidum denominatur: quod (modò vetus sit & rite confectum) non minus colore succino, quam sapore & virtute præ vinis vinaceis splendeat. De hoc Mercator in Transylvania. Eac melle incola delicatum potum conficiunt: qui etiam rerum peritius, vinum Creticum et Malvaticum spinantibus, facile imponat. Et Vlyfles Aldrovander de mulso. Fit præterea ex melle potus gentes toti nunc Sarmatæ, vicinique Moscovitis familiare. Vnde etiam per totam Europam fere, præcipue per Germaniam devehitur. Decoquitur multiplicantur aromate addito, (Medonem vocant) tam* nobile (sepe at lausiorum tantum manjariam sit, & primates solim bibant. Item Mercator in Bohemia de civitate Egra. Tota ornatissima, tota pulcherrima est. Intra pulchris edificijs, civili urbanoque populo, magnificis & eximia virtute præstantibus viris illustris: foris vero amoenissimis ac secundissimis hortis & agris variisque pomorum ac fructuum generibus luxurians. Claret hodie haec civitas ob Medonem (potionem ex melle) qui nullâ paratur quam in hac civitate excellenter.*

^{24.} Methaglen.

And as good and old *Methaglen* excelleth all Wines, as well

well for pleasantnesse in taste, as for health; so being burnt it is better than any burnt Wine, for comforting and setting of a weake and sick stomach, and for recreating the naturall heat.

The manner of burning it (if you know not) may be this. First set on the fire a * deepe Skillet or Kettle, almost full of water: when it boileth, put in a Pewter pot full of *Methaglen*: before that beginneth to boile, skimme it and put in two or three bruised Cloues, and a branch of Rose-marie: then beat the yolke of an Egge in a dish, put vnto it a spoonefull of the *Meth* cold, and stirre them together to keep the yolke from curdling: then put to that a spoonfull of the hot *Meth*: and after that an other, and an other, alwaies beating them together: and then, some and some, put all into the pot, still stirring it about. Then as soone as it boileth, take vp the pot, and, sauing your hands harmefesse, powre it into another warme pot of like capacittie, firing it as it runneth: and so brue it till it will burne no more. A *Methaglen*-posset is of the like vertue.

* The deeper the pot standeth, the sooner it boileth. You may, for a need, set the pot on the Harth in the midst of hot Embers: but take heed the flame melt not the Pewter.

WAx hath no certaine elementar qualitie, but is a meane betweene (1) hot and cold, and betweene dry and moist. It (2) mollifieth the sinewes, it (3) ripeneth and resolueth Vlcers. (4) The quantitie of a Pease in Wax, being swallowed downe of Nurces, doth dissolute the Milke curded in the paps, and (5) ten round peeces of Wax, of the bignesse of so many graines of Millet or Hempseed, will not suffer the Milke to curdle in the stomach.

24.
*The properties
and vertues of
naturall Wax.*

Moreover, it maketh the most excellent, light fit for the vses of the most excellent; for cleernesse, sweetnesse, neatnesse, to be preferred before all other: Which *Scaliger* in his *Ænigmata*, giuing it the precedence, doth intimate.

*Aut Apis, aut Hircus, vel pingua viscera Pini
Ostendere diem, post simul ante diem.*

(1) Galen de simp. med. facult. 1.7. (2, 3, 4, 5.) Georgius Pictorius. Cera flava magis emollit, relaxat, dolorem solvit: eoque illa utimur ad abscessus calefaciendos, emolliendos, concoquendos, & maturandos. Iohannes Guintherius Andernacius. Omnis cera mollit, calefacit, expicit corpora: re-cens melior. Datur in sorbitione dysentericis, favigue ipsi in pulte alicæ prius tostæ: adveratur lactis naturæ; ac milij magnitudine decem grana ceræ hausta, non patientur coagulari lac in stomacho. Si inguen tumeat, albam ceram in pube fixile remedio est. Nec hujus ulus, quos mixta alijs præstat, enumerare medicina potest. Pli. nat. hist. li. 22. cap. 24.

25.

Artificiall Wax.

26.

*To make white
Wax.*

This naturall yellow Wax is by Art, for certaine purposes, made white, red, and greene.

Wax is whited after this manner. Take the whitest and purest Wax: which, being cut into small pecces, put into an earthen vespell, and poure Sea water or Brine into it, as much as may suffice to boile it. And cast in also a little Niter: all this set ouer a soft fire. When it hath boiled vp twice or thrice, lift the vespell from the fire, and, the wax being presently cooled with cold water, take it out: and when you haue scraped off the drosse, if any such hang on, and put it into other Salt water, seeth it againe. And hauing boiled vp twice or thrice, as before, lift it from the fire againe. And then take the bottom of an other earthen pot, or a little round board with a handle in the middle like a Churn-staffe, but without holes: and hauing first wetted the bottom of it in cold water, dip it into the hot vespell, and assoone as this wet bottom toucheth the wax, pull it out againe, and you shall haue sticking to the bottom a thin cake: which when you haue taken off, wet the bottom againe, and dip it as before: and thus doe till you haue taken vp all the wax in cakes. These cakes hang in the open aire vpon a line drawne through them, so that they may not touch one an other, besprinkling them with water in the Sun-shine vntill they be white. If any man would haue wax whiter, let him boile it oftner, and doe all other things in like manner as before.

Hanc dealbanda ceræ rationem docuit Dioscorides, l.2.c.105.

27.

*To make red
Wax.*

To make Wax red, Take to one pound of Wax, in Summer three ounces of cleare Turpentine, in Winter four. These

These dissolve ouer a soft fire, and by and by take it off to coole a little. Afterward mix therewith the red Root of *Anchusa* or **Vermilion*, well ground on a Marble or Glasse, and sweet Oile, of each one ounce: stirre all these and mix them well together. For want of *Vermilion*, they take three times so much red Lead, but that is not so good.

* *Cinabrium,*

Minium.

To make greene Wax, take in stead of *Vermilion*, the like quantitie of *Vert-degrecce*.

^{28.} *To make greene Wax.*

And such is Wax in his kinde, both Naturall and Artificiall. Naturall Wax is altered by distillation into an Oile of maruellous vertue. *Raymund Lulli* greatly commendeth it, prouing it to be rather a Coelestiall or Diuine medicine than humane; because in wounds it worketh miraculously; which therefore is not so well allowed of the common Chirurgians. For it healeth a wound, be the same never so wide and big, being afore wide-stitched vp, in the space of eleuen daies or 12. at the most. But those that are small, this Oile healeth in three or foure daies, by annoyncting onely the wound therewith, and laying on a cloth wet in the same. It stayeth the shedding of the haire, either on the head or beard, by annoyncting the place therewith.

^{29.} *Oile of Wax.*

Also for inward diseases, this Oile worketh miracles, if you give one drachme at a time to drinke with white Wine: for it is excellent in prouoking vrine which is stopped, it helpeth stiches and paines in the loines, it helpeth the cold Gout, or Sciatica, and all other griefes comming of cold.

^{30.} *The vertues of it.*

The making or drawing of this Oile is on this wise. Take of pure new yellow Wax so much as will halfe fill your Retort or Body of Glasse: melt it on the fire, and then powre it into sweet Wine, wherein let it soake: wash it often, and wring it between your hands: then melt it againe and powre it into fresh Wine, wherein soake it, wash it, and wring it as before: and this doe seuen times, euery time putting it into fresh Wine. When thus you haue purified the Wax,

^{31.} *The making of Oile of Wax.*

v. n. 10.

to euery pound thereof adding four ounces of the powder of red Briske finely bruised; put it all together into your Retort of Glasse well luted: v. then set the Retort into an Earthen pot, filling it round about and beneath with fine sifted Ashes or Sand; and set the pot with the Bodie in it on a Furnace, and so distill it with a soft fire. And there will come forth a faire yellow Oile, the which will congeale in the receiuer like Pap when it is cold. If you should rectifie this oile or distill it often, vntill it will congeale no more; then shall you make it ouer hot to take inwardly, and so quicke in the mouth, that you cannot drinke it downe. In the comming forth of this Oile, shall appeare in the Receiuer the four Elements, the Fire, the Aire, the Water, and the Earth, right maruellous to see.

^{32.}
The vertue of
Wax in com-
pound medicines.

So vertuous is Wax by it selfe, both in his owne kinde, and altered by distillation. It is moreouer of great vse mixed with others, and is the ground and foundation of Cere-clothes and Salues: whereof to set downe two or three examples shall not be amisse.

^{33.}
A Cere-cloth.

A Cere-cloth or Ceratum, so called of Cera, doth consist chiefly of Wax and Oile mixed in such proportion, as may make the ointment of iust consistence: and therefore (1) being made in Summer, or compounded with Turpentine, Lard, Gum, Marrow, or any liquid thing, a greater quantity of Wax is required: and being made in Winter, or compounded with Rozin, Pitch, Metals, dried Hearbs, Powders, or any dry thing, a lesse quantity of Wax than Oile is convenient.

v. n. 7.

The Ingredients being prepared, first melt the Wax, and whatsoeuer else of like nature, as Pitch, Suet, &c. in the Oile ouer a gentle fire, or in a double vessel, v. for feare of burning: when they are melted together, put in the Powders and other like Ingredients, if there be any: and assoone as you haue stirred them well together, (before the liquor be very hot) set it a cooling, and make your Cere-cloth.

A Cere-

P. 3. *Of the fruit and profit of Bees.*

A Cere-cloth to refresh the wearied Sinewes and tired Muscles is thus to be made. Take (2) Oile and Wax *ana* two ounces, Turpentine two drams, & Hony halfe an ounce.

To comfort the stomacke and helpe concoction, make a Cerat thus. Take (3) Oile of Masticke, of Mint, of Wormwood, of Nutmeg, and * Speeke, or any of these, and a convenient quantitie of Wax.

For the wormes in the belly of a childe or other, Take Wax and Rozin *Ana* one ounce, Treacle one spoonfull, Aloes two drams. Melt & mingle the Wax & Rozin together in a Pewter-dish, vpon a Chafing-dish and Coales : being melted, skimme it cleane : then taking it off, put in the Treacle, and stirre it among : then hauing pounded the Aloes to powder, strew it vpon, and stirre it in, so that it may not clod. And if, by this time, it be too cold to come from the dish ; warme it a little vpon the Chafing-dish againe : then hauing wet the Table with Butter, poure it thereon, and worke it together with your knife : and so make it vp in a Roule. To make the Dish cleane, warme it, and wipe it with a woollen cloth.

This Cerat is to be applied to the Brest, and to the Nauell. For the Nauell, spread it vpon a round peece of Leather three inches ouer, with a hoale in the middle ; that, the Nauell comming through, the plaister may lie both closer and faster : and for the Brest, spread it vpon a square peece three inches broad, and twice so long : and lay it atthur the Brest, betweene, or close vnder the Paps.

This doe twice together, and let the Plaisters remaine each time vpon the place, vntill the heat of the stomacke haue dried them, and made them loose : which, in some that are much troubled with the wormes, will be within fourre and twentie houres ; although in some they will sticke a whole weeke together.

(1) Fern. Meth. lib. 4. c. 19. & 20. (2) Fern. Meth. l. 4. c. 19. (3) Fern. Meth. l. 5. c. 22.

For example of a Salue, take *Emplastrum de janua*, marvellous effectuall in curing greene wounds and new vlcers.

C. 10.

34.
A Cere-cloth to refresh the Sinewes and Muscles.

35.
A Cere-cloth to comfort the stomacke.

* Nardinum.
36.
A Cere-cloth for the Wormes.

A Salue for greene wounds.

It asswageth inflammation, it cleanseth, it closeth, and filleth with fletch, and maketh whole. It is thus made: * Take the juice of Parsley, Plantan, and Betonie, *ana* one pound: Wax, Pitch, Rozin, and Turpentine, *ana* halfe a pound: boile the Wax, Pitch, and Rozin in the Juices, softly stirring all together, vntill the quantie of the Juices be wasted: and then taking them off the fire, put in the Turpentine, and mix it with the rest.

Another of like effect.

An other.

38.

Take Deere or Mutton-Suet, Wax, Rozin, *ana* two ounces: Turpentine one ounce: boile these together, and skim them: then take this liquor from the fire, and, when it is somewhat cooled, put in two handfulls of the Tops of vnsier Hysop, and stirre it about, and setting it ouer the fire againe, boile it softly about a quarter of an houre, till it be greene: and then straine it, and let it coole. This is chiefly to bee made in *May*, because then the Hysop is in his prime.

* *Sylvius de medicam. simpl. mist. lib. 3. & Fern. Meth. lib. 7.*

Gervais Markham hatz written a small tract of Bees alio, wherin are some fols. small notes, differing from ovhar are herte position; yet he seem to be good and very allowable.

P S A L. I I I. V. 2.

Magna opera I E H O V E, exquisita
ab omnibus qui delectantur in illis.

FINIS.

*This very curious book is quoted by
Dr Johnson in his dictionary.*

OCT 1898



Bees considered Females by Aristotle C 4. 11.
Brood of Bees called Schadous C 4. 20
Queens or Royal Eggs not converted into
Larvae but at once become nymphs C 4. 18
Brood of Bees called Cephens C 4. 20
Artificial Beams p 69 — C 5. 25
Ambrosia or Fauna of Queens not Way. C 6. 23

15
16

The Reverend Charles Butler, M.A.

(1561-1647).

Father of English Bee-Keeping.

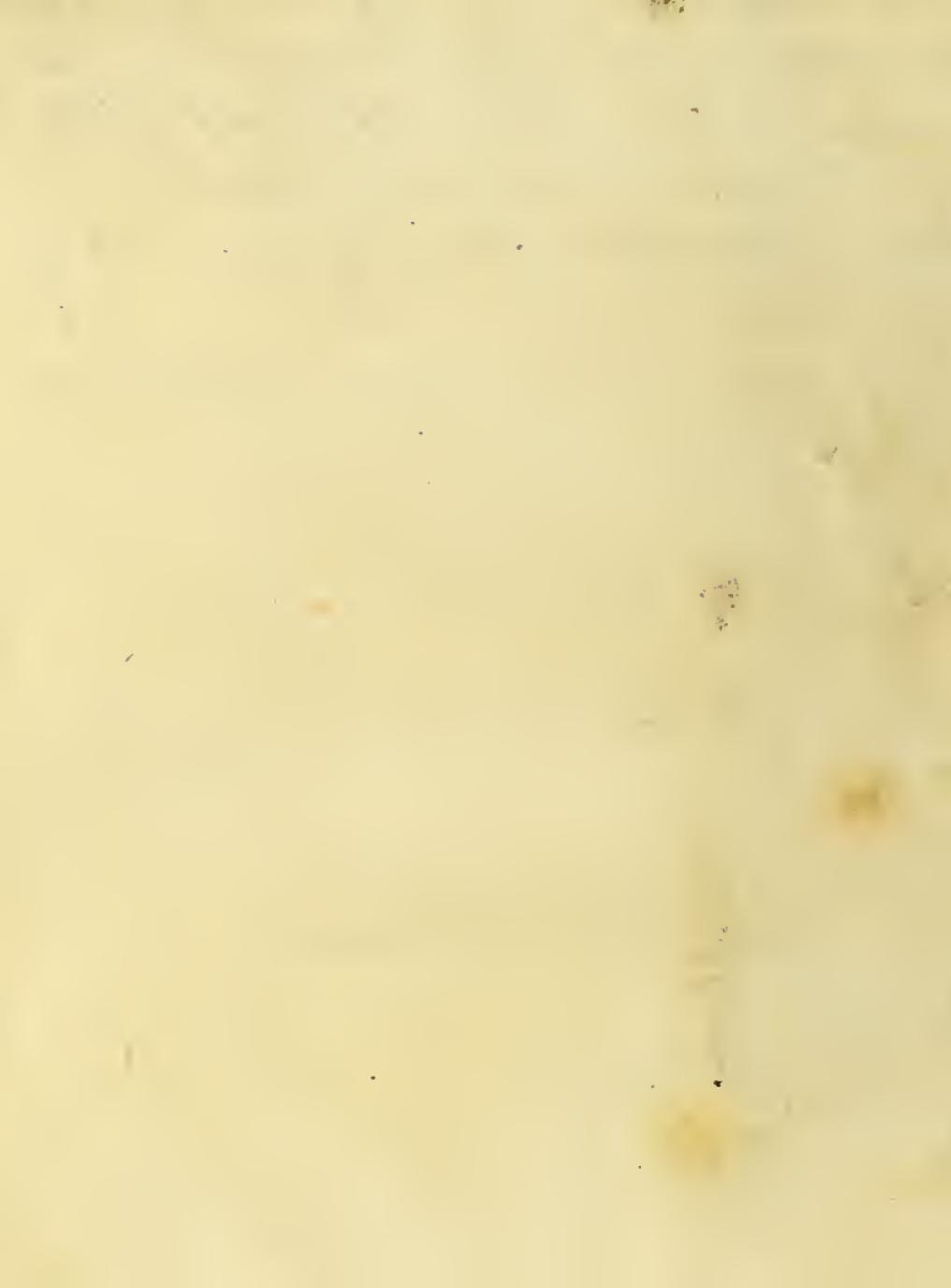
Grammian and Musician.

In the left-hand light Butler is shown in his clerical robes, holding his lovely chalice in one hand, and in the other hand his great bee-book, "The Feminine Monarchie," written at Wootton in 1609. Behind him is a reproduction of the delightful drawing in this book (the honeycomb) with the outer inscription, SOLERTIA ET LABORE. On the left are the arms of Magdalen, Oxford, where he studied from 1579. Below again is Butler preaching from his pulpit at Wootton, and his final words from St. Paul's Epistle to Titus in his fifth and last book, "The Principles of Music," written in 1636. At the apex of this light are the arms of the Diocese of Winchester, where Butler worked for 52 years.

In the right-hand light at the top is a figure of St. Cecilia, Patron Saint of Music, and in the medallions below are the Norman Church of Nateley Scures, Hampshire and the thirteenth century Holy Ghost School, Basingstoke, with the dates of Butler's work as Rector and Headmaster, 1595-1600. Running through the two lights, below again, is the Church of St. Lawrence, Wootton, as it was in Butler's time as Vicar, 17th November, 1600—29th March, 1647. Below again are the old beehives. At the side here is the badge of Queen Elizabeth I, 1558—1603 (the Tudor rose), with the motto, ROSA SINE SPINA. Other little items in this light are the four bells of Wootton, 1625, with their inscriptions, and the fifteenth century font in which Butler baptised his daughter, Elizabeth, whom he called his "honey-girl," because the hives which he gave her in 1612 produced a dowry of £400 at her wedding in Wootton Church to the Reverend Richard White, great grand uncle of the naturalist, Gilbert White, of Selborne, Hampshire.

In the quatrefoil tracery above these two lights are the cypher of our present Queen Elizabeth II, and the national emblems of England (rose), Wales (leek), Scotland (thistle) and Ireland (shamrock). The window is a memorial also of the Coronation Year, 1953.

This window was designed by Gerald E. R. Smith (A. K. Nicholson Stained Glass Studios, 35 Circus Road, St. John's Wood, London, N.W.8). It is in the north aisle of the Hampshire Village Church of Wootton St. Lawrence, three miles west of Basingstoke. The Very Reverend E. G. Selwyn, D.D., Dean of Winchester Cathedral, whose predecessor, Dr. George Abbot, appointed Butler to this living on 17th November, 1600, is to dedicate the window on 14th November, 1954. A brochure on CHARLES BUTLER can be obtained from the Reverend F. R. MONEY, M.A., R.D., Wootton St. Lawrence Vicarage, Basingstoke.



The Church of
Wootton St. Lawrence.
N. Aisle Window.



Charles E. A. Smith -
Art. Est.

